

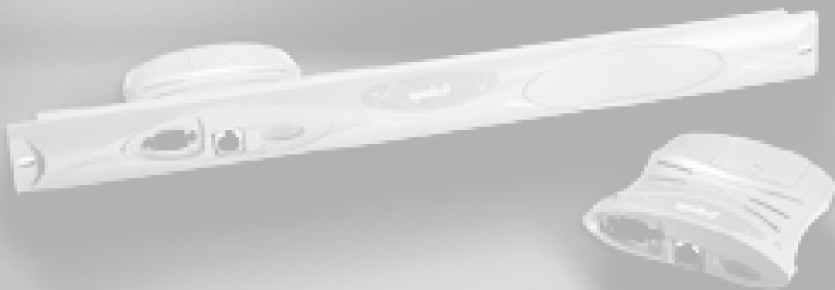


# Spectrum24<sup>®</sup>

## Mobility Server

Model MS1000 | 802.11B | 11 Mbps

## Quick Install Guide





## To the Installer

|                            |   |
|----------------------------|---|
| Document Conventions ..... | 2 |
| Warnings .....             | 3 |

## Specifications & Installation

|                                  |    |
|----------------------------------|----|
| Overview .....                   | 4  |
| Specifications.....              | 4  |
| Installation .....               | 6  |
| Rack Mounting .....              | 8  |
| Wall Mounting .....              | 10 |
| Desktop Mounting .....           | 12 |
| Configuring the IP Address ..... | 14 |
| Gaining Access to the UI .....   | 16 |

## Contact Information

|                       |    |
|-----------------------|----|
| Customer Support..... | 17 |
|-----------------------|----|

## Legal Information

|                               |    |
|-------------------------------|----|
| Regulatory Information .....  | 20 |
| Statement of Compliance ..... | 21 |
| Copyright .....               | 22 |
| Patents .....                 | 23 |

## To the Installer

This guide provides guidelines and specifications for the Spectrum24 Mobility Server installation. It is intended for technicians responsible for the initial installation and commissioning of the Spectrum24 Mobility Server's hardware. It is assumed the installer understands network and wireless LAN concepts.

### Document Conventions

Before operating any equipment, review this document for any hazards associated with installation and use of the device. Also, review standard practices for preventing accidents.



Note

Indicates tips, hints and special requirements.



Caution

Care is required. Disregarding cautions can cause data loss or equipment damage.



Warning

Indicates a potentially dangerous condition or procedure that only Symbol-trained personnel should attempt to correct or perform.

### Safety Information

Only qualified personnel can perform the Spectrum24 Mobility Server installation and removal. Ensure the location for installing the Spectrum24 Mobility Server is dry and dust-free.



## Warnings

- Read installation instructions before connecting the Spectrum24 Mobility Server.
- Verify all equipment before connecting to its power source.
- Connect the power cord to a properly wired and grounded electrical circuit.
- Attach only approved cables to this device.
- Ensure adequate ventilation around the Spectrum24 Mobility Server.
- Ensure ambient operating temperature and humidity levels as per operation specifications.

# Specifications and Installation

## Overview

The Spectrum24 Mobility Server provides Kerberos authentication within the Spectrum24 wireless LAN network. This dedicated module delivers security management and network time services. The IP address assigned during installation provides Kerberos-enabled Access Points, System Administrators and Managers, access to the Spectrum24 Mobility Server.

The Spectrum24 Mobility Server is an encased device that can reside on a user desktop, as well as being wall or rack-mounted. A CompactFlash card can be added to the unit; a security bracket screws in place, blocking the ability to remove the card easily.

## Specifications

### Physical Specifications

|        |                                   |
|--------|-----------------------------------|
| Width  | 125 mm (with mounting bracket)    |
|        | 122 mm (without mounting bracket) |
| Height | 32 mm                             |
| Depth  | 97 mm                             |
| Weight | 0.13 kg                           |

### Product Specifications

|             |                            |
|-------------|----------------------------|
| Part Number | MS-1000-100-WW (worldwide) |
| Processor   | 400 MHz Intel xscale       |
| Memory      | 16 MB FLASH, 32 MB SDRAM   |

|                      |  |
|----------------------|--|
| Expansion Storage    | Available via CFA Slot   |
| Management Interface | DB9 Serial Interface and Web UI  |
| Data Connectivity    | 10/100Base-T Ethernet  |
| Mounting             | Rack mount (with rack-mount bezel accessory)<br>Wall mount<br>Desk mount |

### **Power Specifications**

|                       |                             |
|-----------------------|-----------------------------|
| Max Power Consumption | 100-240 VAC, 50/60 Hz, 0.5A |
| Operating Voltage     | 5.2 VDC                     |
| Operating Current     | 1 Amp                       |
| Input Frequency       | 50 Hz to 60 Hz              |

### **Environmental Specifications**

|                         |   |
|-------------------------|---|
| Operating Temperature   | 0°C to 40°C   |
| Storage Temperature     | -25°C to 55°C   |
| Operating Humidity      | 5% – 93% (Without condensation)                                     |
| Storage Humidity        | 5% – 55% (Without condensation)                                     |
| Operating Altitude      | 50 ft to 10,000 ft @ 28°C   |
| Storage Altitude        | 50 ft to 15,000 ft @ 12°C   |
| Electrostatic Discharge | 8kV (air discharge)<br>4kV (contact discharge)<br>2kV (charge body) |

# Installation

## Preparing for Site Installation

Verify Ethernet, serial port, and power connections. Determine equipment location. Ensure this location meets optimal temperature requirements for the operation of the Spectrum24 Mobility Server unit. If a static IP address is used for the device, this address, together with other network information such as subnet mask, gateway address, domain name and DNS server address, should be available prior to installation or commissioning.

6

## Requirements

- LAN with Spectrum24 network
- APs and MUs installed
- PC terminal or console for direct connection to the Spectrum24 Mobility Server unit
- Phillips screwdriver



## Verifying Package Contents

Unpack the package contents and verify the following items are present:

Spectrum24 Mobility Server (MS-1000 series)

CompactFlash security kit:

- Security bracket

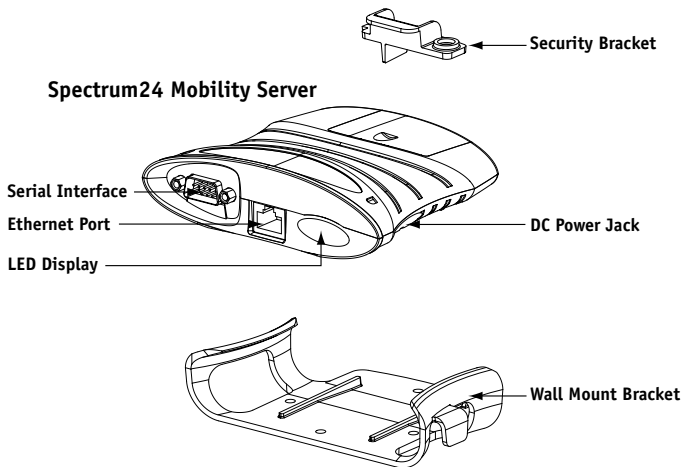
- 1 panhead screw

Wall mount kit:

- 2 plastic wall anchors

- 2 panhead screws

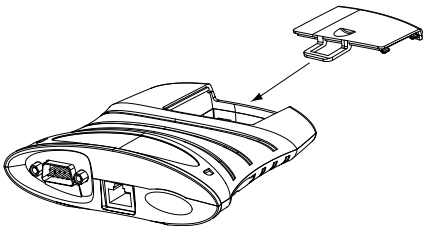
DC power adapter



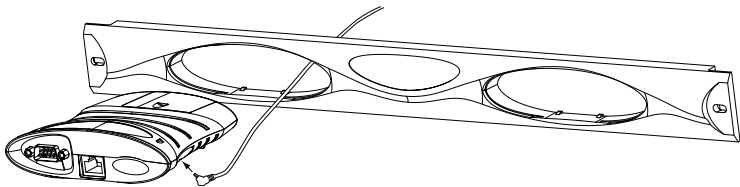
## Rack Mounting

The following procedure requires the Spectrum24 Mobility Server bezel unit, purchased separately.

1. (Optional) Insert the CompactFlash card into the Spectrum24 Mobility Server. Add the unit door to the slot designated for the CompactFlash card.

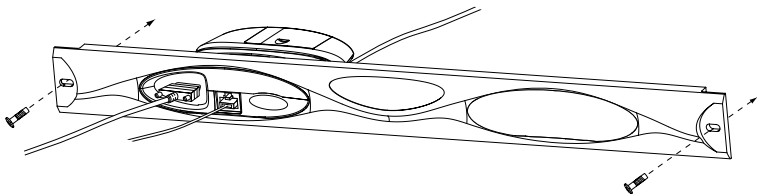


2. Connect the DC power cable from the power outlet through the gaps in the bezel to the power jack on the Spectrum24 Mobility Server.



The LED will flash red when the DC adapter is properly connected.

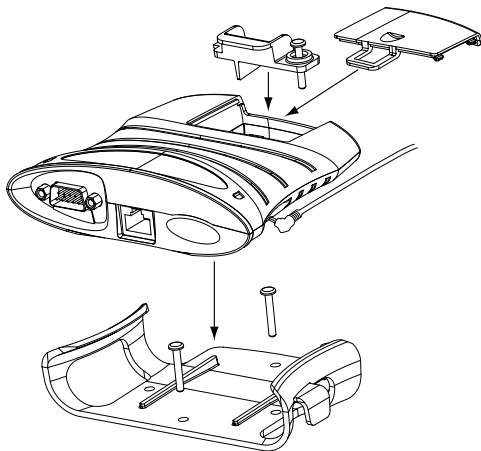
3. Connect an RS-232 cable from the PC console (or terminal) to the Spectrum24 Mobility Server's serial port.
4. Connect the Ethernet port of the Mobility Server to the network hub (or switch). Use a standard Ethernet cable.
5. If a redundant Spectrum24 Mobility Server is not used, push the bezel plug (flat side down) through one of the openings in the bezel until anchored in place.
6. Place the unit in the bezel by pushing it through the gap until device is held in place and power cable is secure. When properly mounted, the power cable will not separate from the unit.
7. Secure the bezel to the front of the rack using two screws.



Refer to the instructions under "Configuring the IP Address" to complete the installation of the Spectrum24 Mobility Server within the network environment.

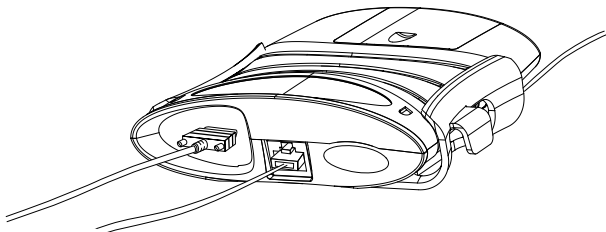
## Wall Mounting

1. Using the supplied screws and wall anchors, attach the wall mount bracket to the designated surface.
2. Connect the DC adapter from the power outlet to the power jack on the Spectrum24 Mobility Server. The LED will flash red when the DC adapter is properly connected.
3. Snap the Spectrum24 Mobility Server unit into the wall mount bracket.
4. (Optional) Insert the CompactFlash card into the Spectrum24 Mobility Server.
5. Secure the security bracket in the slot and place the enclosed screw through the available opening.



Add the unit door to the slot designated for the CompactFlash card.

5. Connect an RS-232 cable from the PC console (or terminal) to the Spectrum24 Mobility Server's serial port.
6. Connect the Ethernet port of the Mobility Server to the network hub (or switch). Use a standard Ethernet cable.



**Front**

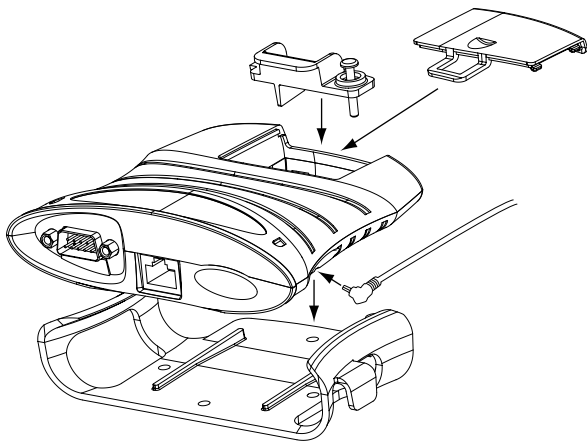


Note

Refer to the instructions under "Configuring the IP Address" to complete the installation of the Spectrum24 Mobility Server within the network environment.

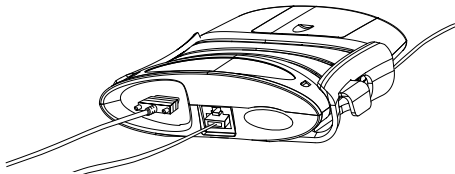
## Desktop Mounting

1. Connect the DC power adapter from the power outlet to the power jack on the Spectrum24 Mobility Server. The LED will flash red when the power adapter is properly connected.
2. Snap the Spectrum24 Mobility Server unit into the wall mount bracket.
3. (Optional) Insert the CompactFlash card into the Spectrum24 Mobility Server.
4. Place the security bracket in the slot and install the supplied screw through the security bracket.



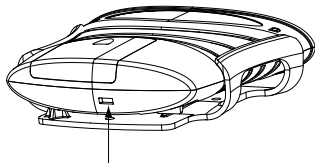
Add the unit door to the slot designated for the CompactFlash card.

4. Connect an RS-232 cable from the PC console to the Spectrum24 Mobility Server's serial port.
5. Connect the Ethernet port of the Mobility Server to the network hub (or switch). Use a standard Ethernet cable.



**Front**

6. (Optional) A standard laptop key lock accessory may be attached to the Spectrum24 Mobility Server unit.



**Key Lock Slot**

**Back**



Refer to the instructions under "Configuring the IP Address" to complete the installation of the Spectrum24 Mobility Server within the network environment.

## Configuring the IP Address

Configuring the Spectrum24 Mobility Server requires setting up a connection to the server and gaining access to the User Interface (UI).

To access and configure the Spectrum24 Mobility Server:

1. Attach a null modem serial cable from the server to the serial port on the PC console or terminal.
2. On the PC console, start the communication program, such as HyperTerminal for windows.
3. Select the correct COM port along with the following parameters:

**Bits per second: 38400**

**Data bits: 8**

**Parity: none**

**Stop bits: 1**

**Flow control: Xon/Xoff**

4. Apply power to the server. The server boot sequence displays on the screen.
5. At the login prompt, enter the following:

**Login: ipset**

**Password: ipset**



If the login prompt does not display, press **Enter** after configuring the terminal emulation application.

6. Press **Enter**.



7. Enter a new host name at the prompt and press **Enter**, or press **Enter** to accept the Symbol default (s24ms).



Lowercase, alphanumeric characters are required.

8. The **Do you wish to use DHCP to obtain an IP address? (y/n)** prompt displays. Press **Y** to use DHCP, or press **N** to enter a static IP address.



A DHCP server is required to provide a dynamic IP address to the server via DHCP. If a user selects DHCP, the IP address displays. Record the IP address for future use; it is necessary to access the browser-based UI to perform system configuration. Refer to "Gaining Access to the UI" for additional information.

For static IP configuration, enter the following information:

**IP Address**

**Subnet Mask**

**Gateway Address**

**Domain Name**

9. The **Do you wish to commit these changes? (y/n)** prompt displays. Press **Y** to accept changes.

## Gaining Access to the UI

Configure the Spectrum24 Mobility Server through the web user interface. Use the online system reference to answer questions on the configuration process.



The IP address created in Step 7, "Configuring the IP Address", is necessary to access the UI.

16

To access the web interface using a web browser:

1. Enter the IP address of the Spectrum24 Mobility Server (obtained in Step 7) in the address bar:  
**https://xxx.xxx.xxx.xxx**
2. Press **Enter**.
3. At the login dialog box, enter **Administrator**, for both the user name and password. Press **Enter**. The Spectrum24 Mobility Server web user interface displays. Refer to the "Online Administrator's Reference", available from the System Reference tab, for information on configuring the Spectrum24 Mobility Server for use.

## Customer Support

Symbol Technologies provides its customers with prompt and accurate customer support. Use the Symbol Support Center as the primary contact for any technical problem, question or support issue involving Symbol products. If the Symbol Customer Support specialists cannot solve a problem, access to all technical disciplines within Symbol becomes available for further assistance and support. Symbol Customer Support responds to calls by email, telephone or fax within the time limits set forth in individual contractual agreements.

When contacting Symbol Customer Support, please provide the following information:

- serial number of unit
- model number or product name
- software type and version number

## North American Contacts

Inside North America, contact Symbol at:

### **For sales and product information:**

Symbol Technologies, Inc.

One Symbol Plaza

Holtsville, New York 11742-1300

Telephone: 1-631-738-2400/1-800-SCAN 234

Fax: 1-631-738-5990

### **For product support and service:**

Symbol Global Support Center:

Telephone: 1-800-653-5350, +1-631-738-6213 (Outside North America)

Fax: 631-563-5410

Email: [support@symbol.com](mailto:support@symbol.com)

## **International Contacts**

Outside North America, contact Symbol at:

Symbol Technologies, Inc.

Symbol Place

Winnersh Triangle, Berkshire, RG41 5TP

United Kingdom

Telephone: 0800-328-2424 (Inside UK), +44 118 945 7529 (Outside UK)

**For other sales offices use the Symbol Services Web-Site for contact information**

[http://www.symbol.com/services/howto/howto\\_contact\\_us.html](http://www.symbol.com/services/howto/howto_contact_us.html)

## **Web Support Sites**

Comprehensive On-line support is available at the MySymbolCare Web-site.

Registration is free and a variety of services can be linked through this web-portal.

## **MySymbolCare**

<http://www.symbol.com/services/msc>

## **Symbol Services Homepage**

<http://www.symbol.com/services>

## **Symbol Software Updates**

<http://www.symbol.com/service/downloads>

## **Symbol Developer Program Web Site**

<http://software.symbol.com/devzone>

## **Symbol Knowledge Base**

<http://kb.symbol.com>

## **Additional Information**

Obtain additional information by contacting Symbol at:

Telephone: 1-800-722-6234 (Inside North America),

+1-631-738-5200 (Inside/Outside North America)

<http://www.symbol.com/>

## Regulatory Information

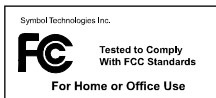
All Symbol devices are designed to comply with rules and regulations in locations they are sold and will be labeled as required. Any changes or modifications to Symbol Technologies equipment, not expressly approved by Symbol Technologies, could void the user's authority to operate the equipment.

### Power Supply

**Note:** Use only a Symbol-approved power supply 50-14001-001 output rated 5.2 Vdc and minimum 1 A. The power supply is certified to EN60950 with SELV outputs.

**Hinweis:** Benutzen Sie nur eine Symbol Technologies genehmigt Stromversorgung 50-14001-001 in den Ausgabe: 5.2 Vdc und minimum 1 A. Die Stromversorgung ist bescheinigt nach EN60950 mit SELV Ausgabe

### 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.

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.

Label Marking: The Term "IC:" before the radio certification only signifies that Industry Canada technical specifications were met.

### **CE Marking and European Economic Area (EEA)**

#### **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/>

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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; 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 (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 (3/02)

## Notes



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72-63053-01

Revision A