Introduction

The Ethernet Access Point (AP) provides a bridge between Ethernet wired LANs and Spectrum24 wireless networks. It provides transparent access between Ethernet networks and radio-equipped mobile units (MUs). Symbol has developed a full range of network terminals, scanners, third-party devices and other equipment.


Precaution

Before installing the AP verify the following:

1. The location for the unit is dry and dust free. Install in wet or dusty areas only with additional protection.
2. The environment has a temperature range between -20°C and 55°C.
3. If attaching to a wired Ethernet, keep AP on the same subnet.

Requirements

The minimum installation requirements for a single-cell, peer-to-peer network are a power outlet and an antenna.

Note: Use and test the radio network with AP. The AP supports a 10Base-T unshielded twisted pair (UTP) standard.

Power Options

- Standard power supply
  - Part Number: 50-24000-006
  - Input: 115/230VAC, 50/60Hz, US line cord
  - Part Number: 23844-00-00
- Remote power distribution system
  - Part Number: AP-PS-11
- See application note AP-PS-01 located on the Symbol Technologies Web page.

Attaching the Antenna(s)

Antenna coverage is analogous to lighting. Users might find an area lit far from a brightly lit area. An area lit sharply might minimize coverage and create dark areas. Uniform antenna placement in an area (like an even placement at the walls) provides even, efficient coverage.

Place the antenna using the following guidelines:

1. Install the antenna as high as practical.
2. Orient the antenna vertically for best reception. Paint the antenna downward attaching the antenna to the ceiling.
3. The AP requires one antenna and can use two. Two antennas provide diversity that can improve performance and signal reception.
4. Attach antennas to ANTENNA connectors on the back of the AP. For a single antenna, use the PRIMARY ANTENNA connector.
5. Refer to antenna documentation for mounting.

The standard antenna performs well in most office environments. Obtain additional or higher performance antennas from Symbol. Contact a Symbol sales representative to order the following models:

- standard rubber antenna
  - ML 2499-AP-A1-00
- single high performance antenna
  - ML 2499-HP-A1-00
- twin high performance diversity antennas
  - ML 2499-DV-A1-00
- mountable F-plane antenna
  - ML 2499-FSA1-100

Symbol continues to add antenna options for Spectrum24 devices. Contact a Symbol sales representative for available antenna options.

If installing two antennas, enable the Antenna Selection in the User Interface.

Hardware Installation

Mounting the AP

The AP rests on a flat surface or attaches to any hard, flat, stable surface. Position the AP at any angle. Use the standard-mounting kit provided. Users can obtain a universal wall-mounting bracket (ML-2499-APB11-00) and an AP-3020 adapter bracket (12-20436-01) from Symbol for attaching the AP and antennas to the wall or ceiling. Contact a Symbol sales representative to order.

Choose an option based on environment:

- Resting flat
  - Rests on the four rubber pads on the underside of the AP. Place on a surface clear of debris and away from traffic.
  - Attaching on the wall in any direction. Rests on screws. Orient the AP in any position on the wall.

Connecting the Power Adapter

The power adapter connects to the rear of the AP and to the power outlet.

1. Verify that the power adapter matches the country-of-use adapter.
2. Plug power adapter cable into the socket on the AP back.
3. Plug adapter into outlet. When the Status indicator on the front of the AP flashes consistently and the Wireless LAN Activity indicator begins flickering the AP is functional and ready to associate with MUs.

The AP works in a default configuration without user intervention after setup. Refer to Access Point Installation in the Spectrum24 Access Point AP-3020/AP-3021 Product Reference Guide for complete installation instructions. Refer to the AP LED indicators to verify proper AP operation.

Network Connection

Locate connectors for Ethernet, antenna and power on the back of the AP.

Antenna Extension Cables

Symbol offers extension cables for AP antennas. Some range loss occurs when increasing the distance between the antenna and the AP.

<table>
<thead>
<tr>
<th>Model</th>
<th>Length</th>
<th>Loss</th>
<th>Range Loss</th>
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<tbody>
<tr>
<td>25-19371</td>
<td>8 ft</td>
<td>0.0 dB</td>
<td>5%</td>
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<tr>
<td>25-19371-02</td>
<td>12 ft</td>
<td>0 dB</td>
<td>10%</td>
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To order extension cables contact a Symbol representative.

Specifications

Physical Characteristics:

- Dimensions: 1.25" H x 5.5" L x 7.25" W (3.18 cm H x 14.97 cm L x 19.69 cm W)
- Weight: (w/power supply) 1 lb (0.454 kg)
- Operating Temp: -4°F to 131°F (-20°C to 55°C)
- Humidity: 10% to 95% non-condensing
- Shock: 40 g, 11mS, half-sine
- ESD: meets CE-Mark
- Drop: Withstands up to a 30 in. (76 cm) drop to concrete with possible surface marring.

Radio Characteristics:

- Frequency Range: 2.4 GHz
- Frequency Hopping: Hops 79 standard
- Weight: 35 lbs (15.9 kg)
- Operating Temp: 0°C to 40°C

Modulation

- Binary FSK

Network Characteristics

- Driver Support: CDX v1.6, NDIS v2.01
- Ethernet Frame: DIX, Ethernet II and IEEE 802.3
- Filtering Packet Rate: 14,400 frames per second filtering
- Ethernet Connection: 10Base-T (RJ-45)
- Ethernet PS/2 serial port: DB-9S-232, 19200 bps
- Version 1, MIB-II and Symbol MIB

Table 10Base-T UTP

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Table 10Base-T UTP

| Use a 10Base-T connection for multiple APs or an AP connected to a wired UTP Ethernet hub. Normal 10Base-T limitations apply. |

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