

# AP-5181 Access Point

## Enterprise-class 802.11a/b/g Outdoor Access Point

### WIRED/WIRELESS LAN

### Rugged enterprise-class access point designed for harsh environments

Symbol's AP-5181 Access Point, specifically designed for outdoor use, delivers enterprise-class wireless networking in harsh environments. In addition to a NEMA 4X housing, severe-weather features include integrated lightning arrestors, surge protectors, extreme temperature range operation and an array of antenna and power accessories. The self-assembling, self-healing mesh capability supports Wi-Fi multimedia (WMM) extensions to ensure quality of service (QoS) while cost-effectively extending corporate networks beyond and between buildings — with no need to install additional Ethernet cable or fiber. With integrated router, firewall, DHCP, AAA and hotspot services, the AP-5181 offers a superior outdoor WLAN solution.

### Extend the reach of your corporate network — cost-effectively

When used as either an access port or a mesh node, the AP-5181 can operate wirelessly, even in harsh conditions. Outdoor applications don't mean sacrificing security or manageability — support for today's standards-based security protocols helps ensure enterprise-level network protection, while a wide variety of administration options provides simple, yet powerful management tools. Because the AP-5181 operates wirelessly, all of this can be implemented outdoors without the added cost of installing network cable or fiber.

### Mesh networking creates a flexible, easily-managed network

Using its mesh capability, the dual-radio AP-5181 can connect to other access points for data backhaul while providing network access to local users. Enabling an array of applications, from simple point-to-point bridges connecting two wired networks to complex multi-node, multi-link networks, this feature offers a simple way to extend the network to outdoor or remote locations. The self-assembling and self-healing aspects of a mesh network make the network flexible and easy to manage. This, combined with the straightforward configuration interface, makes deploying and maintaining a secure wireless network of access points almost effortless.



Shown with optional antennas.

#### FEATURES

NEMA 4X, IP56 Weatherproof housing

Extended temperature range

Mesh-capable

Dual-radio, dual-band design; 802.11a/b/g in 2.4/5 GHz bands

Integrated router, firewall and DHCP server

AAA server and hotspot gateway

Wi-Fi Multimedia (WMM) quality of service (QoS) and voice prioritization

#### BENEFITS

Equipment designed to withstand wind, rain, and extreme temperatures

Operates in temperatures from -30° C to 55° C (-22° F to 131° F)

Self-assembling, self-healing nodes automatically establish wireless links between APs; install nodes wherever there is power — no need to install cable or fiber

Simultaneous support of 802.11a/b/g; works with any standards-based IEEE WLAN device

No need to install extra hardware; easy to scale, upgrade and maintain

Integrated services for authentication and public access management

Superior performance for demanding mission-critical applications, including voice and video

## Engineered to withstand the elements

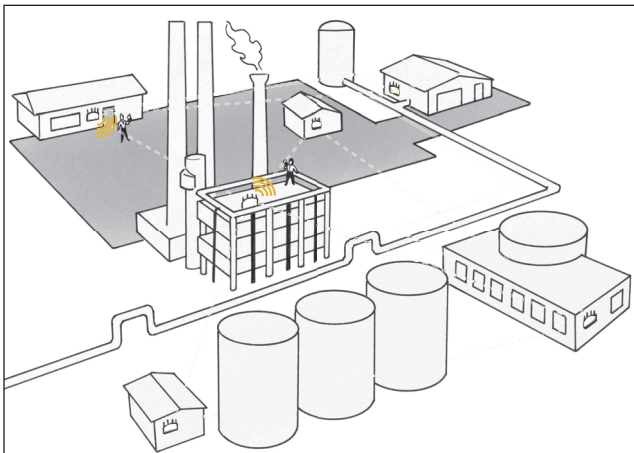
Because the AP-5181 was specifically designed for outdoor use in harsh conditions, it can withstand wind, rain and extreme temperatures. It comes standard with integrated lightning arrestors and surge protection. The optional protective heavy weather mounting kit is designed to protect it from windblown debris at velocities of up to 130 mph, while the surge-protected power tap kit converts high voltage on light poles to low voltage to run the AP. In fact, Symbol offers everything required for a full outdoor AP solution, including a host of outdoor dual-band antennas and outstanding support.

## Backed by world-class service

Symbol covers every aspect of the mobility solution — from network design to ongoing operations — providing unsurpassed breadth and depth of coverage to ensure all of your services and support needs are met. Professional planning, assessment and implementation services ensure that your mobility solution is designed to deliver maximum benefits. And our responsive Customer Services ensure that your solution continues to operate seamlessly and efficiently, and with maximum uptime — reducing your total cost of ownership and improving your return on investment.

For more information on the AP-5181, contact Symbol at +1.800.722.6234 or +1.631.738.2400, or visit us on the web at [www.symbol.com/AP5181](http://www.symbol.com/AP5181)

### Mesh in a refinery environment



**Mesh technology provides a convenient, flexible, scalable and cost-effective means to extend the corporate network — indoors and out — to areas that are typically expensive and hard to cable, including warehouses, shipping yards, processing plants, distribution centers and more.**

## A Complete Outdoor Access Point



AP-5181 Dual Radio AP  
AP-5181-13040-WWR



Heavy Weather Kit  
KT-5181-HW-01R



48V Transformer and Power Surge Protector  
AP-PSBIAS-5181-01R

Not Shown:

Wall Pole and Mounting Kit  
KT-5181-WP-01R

Outdoor Antennas

# AP-5181 Specification Highlights

| Physical Characteristics                |                                                                                                                                              |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensions:                             | 12 in. L x 8.2 in. W x 3.55 in. H/305 mm L x 210 mm W x 89 mm H                                                                              |
| Weight:                                 | 5.50lbs/2.50kg                                                                                                                               |
| Housing:                                | Die cast aluminum alloy; NEMA 4X; IP56                                                                                                       |
| Available Mounting Configurations:      | Pole and wall mounting kit; Protective heavy weather mounting kit; Light pole power transformer kit                                          |
| LEDs:                                   | 4 back-mounted LEDs, indicating radio activity, power, adoption and errors                                                                   |
| Uplink:                                 | 2 ports (WAN, LAN) Auto-sensing 10/100Base-T Ethernet                                                                                        |
| User Environment                        |                                                                                                                                              |
| Operating Temperature:                  | -22°F – 131°F/-30°C to 55°C                                                                                                                  |
| Storage Temperature:                    | -40°F to 185°F/-40°C to 85°C                                                                                                                 |
| Operating Humidity:                     | 5 to 95% RH non-condensing                                                                                                                   |
| Operating Altitude:                     | 8,000 ft./2438m @ 82°F/28°C                                                                                                                  |
| Storage Altitude:                       | 15,000 ft./4572m @ 53°F/12°C                                                                                                                 |
| Electrostatic Discharge:                | IEEE 61000-4-2, 20kV air, 8kV contact                                                                                                        |
| Weather rating:                         | IP56 weather-tight, NEMA 4X                                                                                                                  |
| Wind survivability:                     | >170 mph, 148 knots (without antenna)                                                                                                        |
| Wind loading (165 mph):                 | <60 lbs, 267 Newtons (without antenna)                                                                                                       |
| Shock & vibration:                      | MIL-STD-810F method 514 procedure 1                                                                                                          |
| Transportation/Cargo                    | ASTM D775-80 D4169 level 3                                                                                                                   |
| Power Specifications                    |                                                                                                                                              |
| Operating Voltage:                      | 48V DC                                                                                                                                       |
| Operating Current:                      | 280mA                                                                                                                                        |
| Integrated Power-Over-Ethernet Support: | 802.3af on LAN Port                                                                                                                          |
| Radio Specifications                    |                                                                                                                                              |
| Wireless Medium:                        | Direct Sequence Spread Spectrum (DSSS) and Orthogonal Frequency Division Multiplexing (OFDM)                                                 |
| Network Standards:                      | 802.11a, 802.11b, 802.11g, 802.3                                                                                                             |
| Data Rates Supported:                   | 1, 2, 5.5, 6.9, 11, 12, 18, 24, 36, 48, 54 Mbps                                                                                              |
| Operating Channels:                     | Chan 32-165 (5180 – 5825 MHz); Chan 1-13 (2412-2472 MHz)<br>Actual operating frequencies depend on regulatory rules and certification agency |

|                                              |                                                                                                       |                                                                                                                                                                   |        |     |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----|
| Operating Bands:                             | FCC                                                                                                   | 2.412 to 2.462 GHz<br>5.150 to 5.250 (UNII -1) <sup>1</sup><br>5.725 to 5.850 (ISM)<br><sup>1</sup> Indoor use only                                               |        |     |
|                                              | EU                                                                                                    | 2.412 to 2.472 GHz<br>5.150 to 5.250 GHz <sup>1</sup><br>5.250 to 5.350 GHz <sup>1</sup><br>5.470 to 5.725 GHz (Country Specific)<br><sup>1</sup> Indoor use only |        |     |
| Receiver Sensitivity:                        | Radio .11a (dBm)<br>10% PER for 1,000 bytes<br>IEEE 802.11a sect 17.3.10.1 (MIN)<br>& 17.3.10.4 (MAX) | 6 Mbps                                                                                                                                                            | -91    |     |
|                                              |                                                                                                       | 9 Mbps                                                                                                                                                            | -89    |     |
|                                              |                                                                                                       | 12 Mbps                                                                                                                                                           | -87    |     |
|                                              |                                                                                                       | 18 Mbps                                                                                                                                                           | -83    |     |
|                                              |                                                                                                       | 24 Mbps                                                                                                                                                           | -81    |     |
|                                              |                                                                                                       | 36 Mbps                                                                                                                                                           | -78    |     |
|                                              |                                                                                                       | 48 Mbps                                                                                                                                                           | -74    |     |
|                                              |                                                                                                       | 54 Mbps                                                                                                                                                           | -73    |     |
|                                              |                                                                                                       | Radio .11g (dBm)<br>@ 10% PER for 1,000 bytes<br>IEEE 802.11g sect 19.5.1 (MIN)<br>& 19.5.3 (MAX)                                                                 | 6 Mbps | -89 |
|                                              |                                                                                                       |                                                                                                                                                                   | 9 Mbps | -88 |
|                                              | 12 Mbps                                                                                               |                                                                                                                                                                   | -85    |     |
|                                              | 18 Mbps                                                                                               |                                                                                                                                                                   | -82    |     |
|                                              | 24 Mbps                                                                                               |                                                                                                                                                                   | -80    |     |
|                                              |                                                                                                       | 36 Mbps                                                                                                                                                           | -77    |     |
|                                              |                                                                                                       | 48 Mbps                                                                                                                                                           | -72    |     |
|                                              |                                                                                                       | 54 Mbps                                                                                                                                                           | -70    |     |
| Radio .11g (dBm)<br>@ 8% PER for 1,024 bytes |                                                                                                       | 11 Mbps                                                                                                                                                           | -84    |     |
|                                              |                                                                                                       | 5.5 Mbps                                                                                                                                                          | -88    |     |
|                                              | 2 Mbps                                                                                                | -90                                                                                                                                                               |        |     |
|                                              | 1 Mbps                                                                                                | -94                                                                                                                                                               |        |     |
| Available Transmit Power Settings:           | 4-20 dBm                                                                                              |                                                                                                                                                                   |        |     |
| Antenna Protection:                          | Transient IEEE 61000-4-4, level 4, EFT; Surge IEEE 61000-4-5 Class 5, 1.2x50uS & 8x20uS Waveform      |                                                                                                                                                                   |        |     |
| Regulatory                                   |                                                                                                       |                                                                                                                                                                   |        |     |
| Standards Compliance:                        | 802.11a/b/g, 802.11i, WPA2, WMM, UAPSD                                                                |                                                                                                                                                                   |        |     |
| Product Certifications:                      | UL / cUL 60950-1, IEC / EN60950-1                                                                     |                                                                                                                                                                   |        |     |
| Radio Approvals:                             | FCC (USA), Industry Canada, CE (Europe)                                                               |                                                                                                                                                                   |        |     |

## AP-5181 Part Numbers and Product Descriptions

| Part Number        | Description                               |
|--------------------|-------------------------------------------|
| AP-5181-13040-WVR  | AP-5181 802.11a+g                         |
| KT-5181-HW-01R     | AP-5181 Heavy Weather Kit                 |
| KT-5181-WP-01R     | AP-5181 Wall/Pole Mounting Kit            |
| AP-PSBIAS-5181-01R | 48V Transformer and Power Surge Protector |

## About Symbol Technologies

Symbol Technologies, Inc., The Enterprise Mobility Company™, is a recognized worldwide leader in enterprise mobility, delivering products and solutions that capture, move and manage information in real time to and from the point of business activity. Symbol enterprise mobility solutions integrate advanced data capture products, radio frequency identification technology, mobile computing platforms, wireless infrastructure, mobility software and world-class services programs. Symbol enterprise mobility products and solutions are proven to increase workforce productivity, reduce operating costs, drive operational efficiencies and realize competitive advantages for the world's leading companies. More information is available at [www.symbol.com](http://www.symbol.com)



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