

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-modified 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-modified, 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

About Motorola

Motorola is known around the world for innovation and leadership in wireless and broadband communications. Inspired by our vision of Seamless Mobility, the people of Motorola are committed to helping you get and stay connected simply and seamlessly to the people, information, and entertainment that you want and need. We do this by designing and delivering "must have" products, "must do" experiences and powerful networks — along with a full complement of support services. A Fortune 100 company with global presence and impact, Motorola had sales of US \$35.3 billion in 2005. For more information about our company, our people and our innovations, please visit <http://www.Motorola.com>

Corporate Headquarters
Symbol Technologies,
A Motorola Company
One Symbol Plaza
Holtsville, NY 11742-1300
TEL: +1.800.722.6234
+1.631.738.2400
FAX: +1.631.738.5990

For Asia Pacific Area
Symbol Technologies,
A Motorola Company
(Singapore Branch)
Asia Pacific Division
230 Victoria Street #12-06/10
Bugis Junction Office Tower
Singapore 188024
TEL: +65.6796.9600
FAX: +65.6796.7199

For Europe, Middle East and Africa
Symbol Technologies,
A Motorola Company
EMEA Division
Symbol Place, Winnersh Triangle
Berkshire, England RG41 5TP
TEL: +44.118.9457000
FAX: +44.118.9457500

For North America, Latin America
and Canada
Symbol Technologies,
A Motorola Company
The Americas
One Symbol Plaza
Holtsville, NY 11742-1300
TEL: +1.800.722.6234
+1.631.738.2400
FAX: +1.631.738.5990

Web Site
For a complete list of Symbol subsidiaries
and business partners worldwide contact
us at:
www.symbol.com
E-mail
info@symbol.com



Engineered to withstand the elements

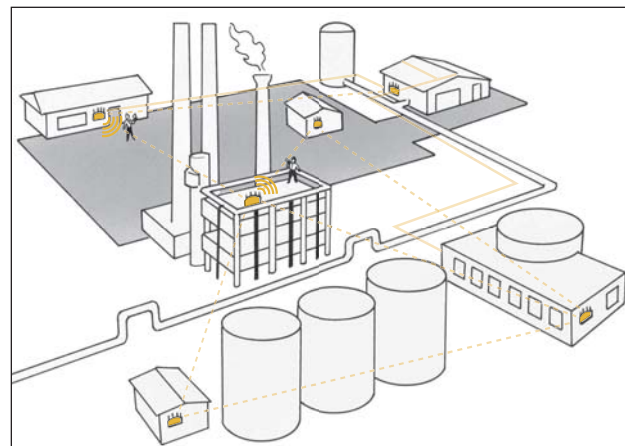
Because the AP-5181 was specifically designed for outdoor use in harsh conditions, it can withstand wind, rain and extreme temperatures. It comes standard with integrated lightning arrestors and surge protection. The optional protective heavy weather mounting kit is designed to protect it from windblown 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

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-modified; 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) Actual operating frequencies depend on regulatory rules and certification agency

Operating Bands:	FCC	2.412 to 2.462 GHz 5.150 to 5.250 (UNII -1) ¹ 5.725 to 5.850 (ISM) ¹ Indoor use only
	EU	2.412 to 2.472 GHz 5.150 to 5.250 GHz ¹ 5.250 to 5.350 GHz ² 5.470 to 5.725 GHz (Country Specific) ¹ Indoor use only
Receiver Sensitivity:	Radio .11a (dBm)	6 Mbps -91
	10% PER for 1,000 bytes	9 Mbps -89
	IEEE 802.11a sect 17.3.10.1 (MIN) & 17.3.10.4 (MAX)	12 Mbps -87
		18 Mbps -83
		24 Mbps -81
		36 Mbps -78
		48 Mbps -74
		54 Mbps -73
	Radio .11g (dBm)	6 Mbps -89
	@ 10% PER for 1,000 bytes IEEE 802.11g sect 19.5.1 (MIN) & 19.5.3 (MAX)	9 Mbps -88 12 Mbps -85 18 Mbps -82 24 Mbps -80 36 Mbps -77 48 Mbps -72 54 Mbps -70
Available Transmit Power Settings:	Radio .11g (dBm)	11 Mbps -84
	@ 8% PER for 1,024 bytes	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-WWR	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



BARCODING, WIRELESS AND DATA COLLECTION

Our customers turn to us to help them become more productive and profitable. TPI's expertise guarantees your project will be successful: on time, on budget and meet your ROI requirements.

TPI will facilitate your entire wireless and data collection project:

- ✓ *Business analysis*
- ✓ *Project justification & ROI*
- ✓ *Wireless design, RF site survey and spectrum analysis*
- ✓ *WWAN, WLAN design & installation*
- ✓ *Custom software*
- ✓ *Integration w/legacy systems*
- ✓ *Mobile computers*
- ✓ *Data collection terminals*
- ✓ *Barcode printers, labels and scanners*
- ✓ *RFID solutions*
- ✓ *Configuration and deployment*
- ✓ *Training and installation*
- ✓ *Service and upgrades*
- ✓ *Remote device management and support*

TPI can share best practices in data collection from a number of industries including wholesale distribution, manufacturing, healthcare and retail/consumer goods. Our expertise allows you to shorten your learning curve and increase your return on investment.

Product specification sheet provided by TPI

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