AP-5181 Access Point

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

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	BENEFITS
NEMA 4X-modified, IP56 Weatherproof housing	Equipment designed to withstand wind, rain, and extreme temperatures
Extended temperature range	Operates in temperatures from -30° C to 55° C (-22° F to 131° F)
Mesh-capable	Self-assembling, self-healing nodes automatically establish wireless links between APs; install nodes wherever there is power – no need to install cable or fiber
Dual-radio, dual-band design; 802.11a/b/g in 2.4/5 GHz bands	Simultaneous support of 802.11a/b/g; works with any standards-based IEEE WLAN device
Integrated router, firewall and DHCP server	No need to install extra hardware; easy to scale, upgrade and maintain
AAA server and hotspot gateway	Integrated services for authentication and public access management
Wi-Fi Multimedia (WMM) quality of service (QoS) and voice prioritization	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**

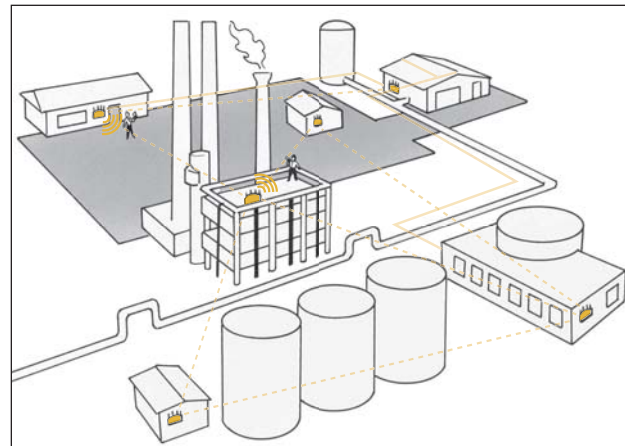**MOTOROLA**

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

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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[1]
		5.470 to 5.725 GHz (Country Specific)
		[1]Indoor use only

Receiver Sensitivity:	Radio .11a (dBm) 10% PER for 1,000 bytes IEEE 802.11a sect 17.3.10.1 (MIN) & 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) @ 10% PER for 1,000 bytes IEEE 802.11g sect 19.5.1 (MIN) & 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) @ 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-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