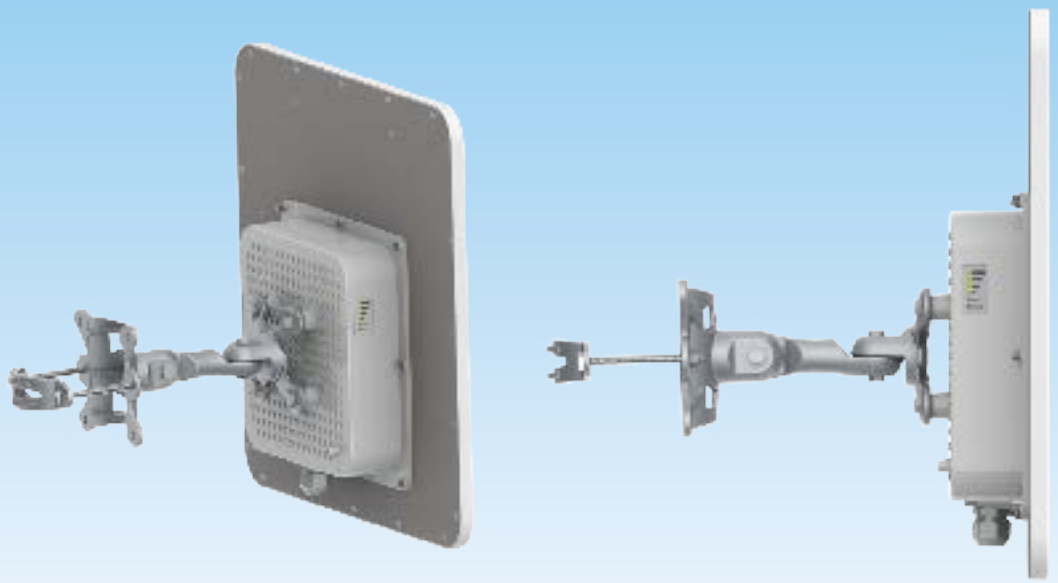
APC Mach 5



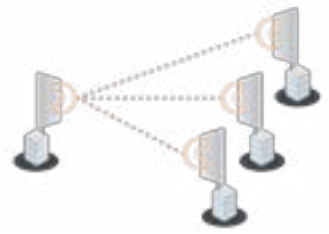
The APC Mach 5 presents a 5 GHz point-to-point product with superior performance building long distance links. This product is equipped with an extreme output power (up to 29 dBm) 802.11n radio that was created with a unique hardware design and coupled with a reliable, feature-rich operating system. This device also has a robust, IP-67 compliant enclosure which is combined with a high-gain dual-polarized panel antenna. The APC Mach 5 is generally designed for PTP applications,but can also act as a high-end client device.

The included, robust software engine allows the APC Mach 5 to work as bridge or as a router, provides a user-friendly Adobe Flex - based GUI with instant changes, includes useful installation tools (Site survey, Antenna alignment, Delayed reboot, Spectrum analyzer), and also is compatible with Wireless Network Management System for one of the most advanced management tools on the market.

Usage examples

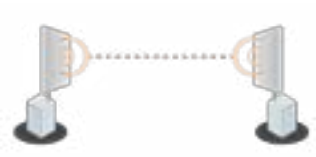
PTMP

Deliberant APC Mach 5 is an ideal device for point-to-multiple point applications as a long range client device.



PTP

APC Mach 5 is a great device for long range point-to-point applications.



Product/ distance recomendation	PTMP mode	PTP mode	PTP mode (full capacity)
APC Mach 5	25 km/ 15.53 mi	50 km/ 31.07 mi	10 km/ 6.21 mi

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APC Mach 5

Wireless

WLAN standard	IEEE 802.11 a/n, iPoll (proprietary)
Radio mode	MIMO 2x2
Operating modes	Access point (auto WDS), Station, Station WDS, iPoll Access Point, iPoll Station
Radio frequency band	5.1 - 5.9 GHz (country dependent - FCC 5.745 to 5.825 GHz)
Transmit power	Up to 29 dBm (country dependent)
Receive sensitivity	Varying between -95 and -75 dBm depending on modulation
Channel size	20, 40 MHz
Modulation schemes	802.11 a/n: OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Data rates	802.11 n: 300, 270, 240, 180, 120, 90, 60, 30 Mbps
	802.11 a: 54, 48, 36, 24, 18, 12, 9, 6 Mbps
Error correction	FEC, Selective ARQ,
Duplexing scheme	Time division duplex

Receive sensitivity (dBm)								
802.11 N/ iPoll		**MCS0**	**MCS1**	**MCS2**	**MCS3**	**MCS4**	**MCS5**	**MCS6**	**MCS7**
		-93	-91	-89	-86	-83	-79	-77	-75
		MCS8	**MCS9**	**MCS10**	**MCS11**	**MCS12**	**MCS13**	**MCS14**	**MCS15**
		-93	-91	-89	-86	-83	-79	-77	-75
802.11a		**6 Mbps**	**9 Mbps**	**12 Mbps**	**18 Mbps**	**24 Mbps**	**36 Mbps**	**48 Mbps**	**54 Mbps**
		-95	-94	-92	-90	-87	-84	-79	-77

Output power (dBm)								
802.11 N/ iPoll		**MCS0**	**MCS1**	**MCS2**	**MCS3**	**MCS4**	**MCS5**	**MCS6**	**MCS7**
		29	29	29	29	28	28	27	27
		MCS8	**MCS9**	**MCS10**	**MCS11**	**MCS12**	**MCS13**	**MCS14**	**MCS15**
		29	29	29	29	28	28	27	27
802.11a		**6 Mbps**	**9 Mbps**	**12 Mbps**	**18 Mbps**	**24 Mbps**	**36 Mbps**	**48 Mbps**	**54 Mbps**
		29	29	29	29	28	28	27	25

Antenna

Type	Integrated directional dual-polarized panel
Gain	23 dBi

Wired

Interface	10/100 Base-T, RJ45
Built-in surge protection	Yes

Networking

Operating modes	Bridge, Router
WAN	Static IP, DHCP client, PPPoE client
NAT	Routing w/ or w/o NAT
Static routing	Supported
DHCP	Client, Server, Relay
Port forwarding	Supported
VLAN	Supported for management and data

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APC Mach 5

Softwave

General	Ability to define/limit frequency, channel width, EIRP, modulation
Advanced wireless functionality	ATPC (automatic transmit power control), DFS 3, auto-channel, auto-modulation
Operating mode	Router, Bridge
Wireless operating modes	AP auto WDS, Station, Station WDS, Virtual radios (VSSID), iPoll access point, iPoll client
Wireless security	WPA/WPA2 Personal, WPA/WPA2 Enterprise, WACL, User isolation, UAM (web portal authentication)
Wireless QoS	WMM
WAN protocols	Static IP, DHCP client, PPPoE client
Network	NAT, static routing, firewall, port forwarding, VLAN, traffic shaping
Services	DHCP server, SNMP server, NTP client, Alerts, Remote syslog, Wireless and Ethernet statistics, bandwidth limiting
Management	HTTP(S) GUI, SSH CLI, SNMP read, WNMS, troubleshooting file, reset via reset tool
Tools	Site survey, Link test, Antenna alignment, Ping, Traceroute, Spectrum analyzer

Physical

Dimensions	Length 335 mm (13 ‘’), width 335 mm (13 ‘’), height 90 mm (3.5 ‘’)
Weight	3.3 kg (7.3 lb)
Power supply	12 - 48 V DC passive PoE
Power source	100 – 240 VAC via included adapter
Power consumption	6.5 W

Environmental

Operating temperature	-30°C (-22 F) ~ +75°C (+167 F)
Humidity	0 ~ 90 % (non-condensing)

Management

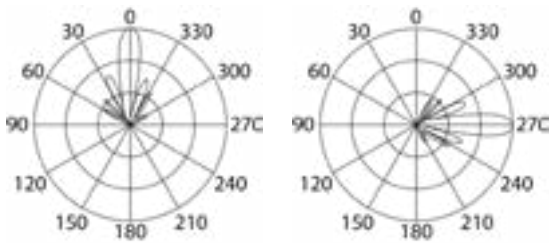
System configuration	User-friendly web GUI, Command line via SSH, centralized Wireless Network Management System, reset to defaults via special ICMP packet
System monitoring	SNMP v1/2c/3 server, Syslogs, system alerts via e-mail and SNMP trap

Regulatory

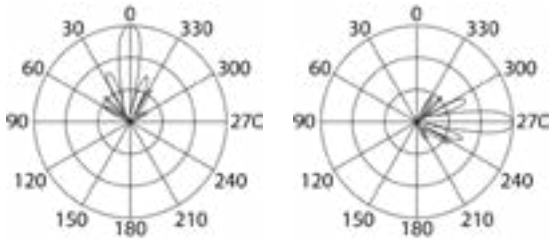
Certification	FCC/ CE/ Safety/ RoHS compliant

Antenna specifications

RF patterns (horizontal)



RF patterns (vertical)



Frequency range	5.1 - 5.9 GHz
Gain	23 dBi
Polarization	Dual linear
Cros-pol Isolation	27dB minimmum
Max VSWR	1.5:1
H-pol Beamwidth	6 deg
V-pol Beamwidth	7 deg
Elevation Beamwidth	9 deg

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