AMG8870F-03-90 SKYWAVE III™ WIRELESS RADIO

Outdoor Wireless Radio

Optimised for long range point to point and point to multipoint applications.

Gigabit	Wireless	Waterproof	Temp	PSU	Secure
x1	Up to 3km	IP66	-40~+65°C	24V passive	802.1x

[AMG8870F-03-90]

OVERVIEW

The AMG8870F-03-90 delivers the highest performance and stability available in the 5GHz 802.11ac class. The product combines a highly advanced radio core containing MIMO 2x2 technology with integrated, high-gain, dual polarization 90° sector antenna.

The feature-rich operating system is optimised for ultra-high performance wireless communication, 500+ Mbps throughput - the result of a powerful hardware platform with 802.11ac technology based radio and a proprietary data transmission protocol Smart Station Coordination Function (SSCF). Incorporating a QCA 9563 CPU (750 MHz), a QCA 9882 radio and 64 MBytes of RAM and 16 Mbytes of flash memory, the AMG8870F-06 radio is an ideal solution for capacity demanding applications.

The 24V Gigabit Ethernet port (passive PoE) allows utilising the full capacity of the radio when used in a point-to-point or point-to-multipoint network design.

FEATURES

- Base station / Satellite, PtP
- Smart Station Coordination Function (SSCF)
- Up to 3km (integrated antenna)
- Up to 500Mbps compressed video throughput
- 5/10/20/40/80MHz Channelization support
- User Configurable gain up to 23dBm (30dBm max)
- 24V passive PoE
- Extremely compact and light
- IP66 Rated Enclosure
- -40°C to +65°C Operating Range

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Specifications.

Wireless.

WLAN Standard	IEEE 802.11 a/n/ac, SSCF
Radio Mode	MIMO 2x2
Radio Frequency Band	5.150 - 5.850 GHz models (FCC 5.150-5.250 and 5.725-5.850GHz)
Transmit Power	Up to 30dBm (Country Dependent)
Channel Size	5, 10, 20, 40, 80 MHz
Modulation Schemes	802.11 a/n: OFDM (64-QAM, 16-QAM, QPSK, BPSK) 802.11 ac: OFDM (256-QAM, 64-QAM, 16-QAM, QPSK, BPSK)
Data Rates	802.11 ac@40MHz: 400, 360, 300, 270, 240, 180, 120, 90, 60, 30 Mbps 802.11 ac@40MHz: 866, 780, 650, 585, 520, 390, 260, 195, 130, 65 Mbps
Error Correction	FEC, LDPC
Duplexing Scheme	Time Division Duplex

Antenna.

Type	Integrated dual-polarized 90° directional panel antenna
Gain	18dBi

Ethernet.

Interface	10/100/1000 Base-T, RJ45

Software.

Wireless Operating Modes	Access point (auto WDS), access point, station (WDS), station (ARP NAT)
Wireless Techniques	Smart station polling, smart auto-channel, adaptive auto modulation, automatic transmit power control (ATPC)
Wireless Security	WPA/WPA2 personal, WPA/WPA2 enterprise, WACL, user isolation
Wireless QoS	4 queues prioritization
Network Operating Modes	Bridge, router IPv4, router IPv6
Network Techniques	Routing with and without NAT, VLAN
WAN Protocols	Static IP, DHCP client, PPPoE client
Services	DHCP server, SNMP, NTP client, router advertisement daemon, ping watchdog
Management	HTTP(S) GUI, SSH, SNMP read, WNMS, Telnet
Tools	Site survey, link test, antenna alignment

Physical.

Dimensions	Length 380mm, width 100mm, height 35mm
Weight	413g
Mounting	Pole mounting bracket included

Power.

Power supply	24VDC passive PoE (24V passive PoE adapter is included in the package)
Power Source	100 - 240VAC
Max Power Consumption	10W

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Specifications.

Environmental.

Operating Temperature	-40°C to +65°C
Humidity	0% to 90% Relative Humidity

Management.

System Monitoring	SNMP v1/2c/3 server, Syslogs, system alerts via e-mail and SNMP trap
Configuration	Web UI

Regulatory.

Certification	FCC/IC/CE

Wireless performance.

40 MHz	Modulation, Mbps	400	360	300	270	240	180	120	90	60	30
	TX Power, dBm	26	27	28	29	30	30	30	30	30	30
	Receive sensitivity, dBm	-70	-72	-76	-78	-80	-84	-87	-92	-94	-95
80 MHz	Modulation, Mbps	866	780	650	585	520	390	260	195	130	65
	TX Power, dBm	24	25	25	26	27	28	28	29	29	29
	Receive sensitivity, dBm	-64	-66	-70	-72	-74	-78	-81	-85	-88	-90

A selection of Antennae and Cable options are available on request.

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Smart Station Coordination Function (SSCF).

AMG's multiple client coordination, when the base-station is transmitting, decreases latency. The multi-coordination feature is operating in hybrid mode, when different client groups are divided into categories based on the client activity. More active stations are put in the main scheduler window, which performs a round-robin operation with every active CPE by allocating them a data slot as well as a time-slot for transmission (TDD) which is limited by the downlink/uplink ratio.

AMG's hardware accelerated QoS (allows prioritising mission critical data and delivery of different services). The hardware QoS is realised by re-using the available wireless multimedia extensions (WME) capability available in HCCA and EDCA standards. The lower priority queues, which are usually used for http, ftp, torrent etc. enables traffic only when a connected station receives the "permit-token" from the AB/BTS, otherwise the data is buffered until the token is received. The higher priority queues, like video or voice, which require low latency and jitter free performance are allowed to transmit data without receiving permission from the AP/BTS.

The dynamic uplink/downlink ratio (improves throughput for high density client scenarios, where downlink is more critical then uplink). The uplink/downlink ratio is controlled by the AP/BTS, which decides based on the amount of active clients in the scheduler, what ratio is appropriate for the current situation.

New form factor

The shape of the enclosure is now smaller, lighter but retains the IP-66 water protection rating. Smaller packaging reduces freight costs and makes them less obvious. The new design has no metal parts, which makes them lighter and corrosion resistant.

New mounting

The adjustable mounting bracket is very easy to assemble and install. It consists of two easy to connect parts that allow tilting the device up and down when installing on the pole. A metal strap is included to securely tighten the device. This design includes additional reinforcements and thicker materials to ensure survival in extreme climate conditions.

Part Numbers.

AMG8870F-03-90	Up to 500Mbps video, Integrated 90° directional antenna, Up to 3 km, Includes 1x radio and 1x pole bracket

Recommended PSUs.

24VDC passive PoE adapter is included in the package.

NOTE: Passive PoE does not perform a handshake, so it is extremely important to know what PoE voltage your device requires before plugging in the Ethernet cable and powering it up. If you connect the wrong voltage you may cause permanent electrical damage to the device.

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