AE106

High Performance Indoor/Outdoor 5GHz 802.11ac Wireless CPE

HIGHLIGHTS

- 5GHz IEEE 802.11ac 2X2 MIMO with two spatial streams
- Up to 867 Mbps data rate
- Enhanced transmit power and receive sensitivity
- Multiple operation modes: Client, WDS, AP
- Supports router and bridge mode
- Supports a full range of networking and management features
- Indoor and Outdoor deployment

DIMENSIONS & WEIGHT

- Dim: 262.34mm(H) x 117.89mm(W) x 52.20mm(D)
- Weight: 652g

OVERVIEW

The AE106 is a 5GHz, 2x2 MIMO, 802.11ac multi-function customer premises equipment (CPE) for indoor or outdoor deployments. It is primarily designed for converting Wi-Fi signals to a wired LAN connection, allowing the rapid deployment of wireless broadband services. It is one of the most economical and effective last-mile access solutions in the market.

The AE106 is able to achieve a data rate of up to 867 Mbps when connected to the AX110, AP108 or most 802.11ac access points (AP). The enhanced transmit power and receive sensitivity make it possible to extend the AP's signal to a much greater range and to work in environments with significant RF interference. The AE106 combines Wi-Fi access point and client capabilities and can work in either router mode or bridge mode. This flexibility allows the AE106 to fit a wide variety of deployment scenarios.

The AE106 supports a full range of networking and management features including enhanced security mechanisms: WMM QoS, MAC address cloning; filtering mechanisms based on IP, Protocol or Port; NTP synchronization; and web configuration. Cloud controller capability is being incorporated and will be available at a later date.

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FEATURES

2x2 MIMO 802.11ac Radio, Up to 867Mbps throughput:
The AE106 is fully compliant to IEEE 802.11ac standards, which includes 2x2 MIMO to enhance Wi-Fi signal strength and data throughput (by leveraging two simultaneous spatial streams). The AE106 is able to operate in 20/40/80MHz channel widths in the 5GHz spectrum. The maximum transmit and receive data rate is 867Mbps. The AE106 is compatible with a wide variety legacy of 802.11a, 802.11n and the latest 802.11ac Wi-Fi APs, including our state-of-the-art 802.11ac AP108 and AX110.

Enhanced Transmit Power and Receive Sensitivity:
The AE106 has a pair of internal 16dBi high-gain antennas to provide excellent receive sensitivity in the entire receiver chain. Combining the excellent receive sensitivity with 500mW of transmit power, the AE106 is able to extend the Wi-Fi range of access points up to four times the range of built-in Wi-Fi adapters of typical laptops and desktops. This allows far greater wireless access network coverage for any Wi-Fi deployments, especially in dense urban and vast rural environments. In areas with significant wireless interference, the AE106 can also significantly enhance signal reception with the powerful 2x2 MIMO smart antennas.

Multiple Operation Modes:
The AE106 can support multiple operation modes including client, client with WDS, and AP. It can operate in either router mode or bridge mode. Setup is simplified by using the built-in configuration wizard, just clicking and following the on-screen instructions. The AE106 supports the Static, DHCP and PPPoE methods of connecting to the Internet WAN and integrates the DHCP server for the LAN interface. This flexibility allows the customer to choose the appropriate AE106 operation mode for different deployment scenarios. For example, the AE106 can be used as a wireless client to connect to a Wi-Fi AP a mile away, or to connect to the Internet using the built-in Ethernet port as a standalone Wi-Fi AP for high-density deployments in large offices, schools, hospitals and hotels. It can also be deployed alongside legacy 802.11b/g/n 2.4GHz access points to increase the capacity, the range and the performance of these Wi-Fi networks thus providing a better customer experience.

Comprehensive Functionality:
The AE106 is a carrier grade product supporting a full range of networking and management features. With WMM QoS, services will receive the appropriate bandwidth and latency for the applications. This will improve the end user's experience when accessing the internet. Using MAC address cloning can increase security by hiding any internal (private) devices from the public internet. The built-in firewall allows filtering mechanisms based on IP, Protocol or Port between the private network and public network to further enhance the private network's security. Web configuration and built-in utilities make it simple to manage the AE106, including status monitoring, local time synchronization with NTP server, router table configurations and to perform basic troubleshooting.
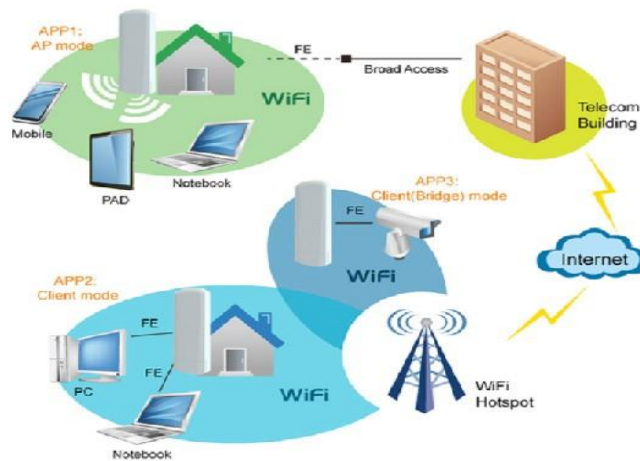
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Easy Installation:

The AE106 is designed with enhanced weather resistance capability allowing it to be deployed in a wide variety of harsh outdoor environments. The enclosure is dust and water resistant to IP55 levels. The AE106's operating temperature is from -10°C to +55°C. It can be installed in many indoor or outdoor locations to support broadband placed on a desk, installed next to a window, on a pole, on a wall or on the rooftop.

APPLICATIONS

Broadband Access in Rural Areas:

The challenges in rural areas or remote towns include sparse population, difficult terrain, costly construction, harsh environmental conditions, lack of power, and backhaul connectivity. The AE106 is designed to overcome difficulties in deployment in these scenarios and provide cost effective broadband network services with long range Wi-Fi access of up to 2 miles/ 3 km (Line of Sight) from the location of an outdoor AP.

Indoor Coverage as a Wireless LAN Hotspot:

The AE106 can resolve issues encountered when using outdoor Wi-Fi Access Points to provide indoor coverage to Wi-Fi client devices inside residential or commercial buildings. In this scenario, regular indoor Wi-Fi client devices are unable to reach outdoor APs, typically located much further away. As indoor Wi-Fi client devices provide much lower transmit power compared to outdoor Wi-Fi Access Points like the AX110, the AE106 is deployed to provide sufficiently strong Wi-Fi signal to these outdoor APs. The AE106 is designed to be able to transmit Wi-Fi signals much further with its purpose built high performance smart antennas and high transmit power, providing the ability for outdoor Wi-Fi APs to provide effective coverage for traditionally inaccessible indoor locations, significantly enlarging the coverage areas of these outdoor APs. With this strategy, by using only outdoor APs and the AE106, a service provider can rapidly deploy a citywide Wi-Fi network to provide broadband access for both indoor and outdoor locations.

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Wireless Backhaul for Security Systems:

The AE106 can be used in a security monitoring system by connecting cameras to the monitoring system's controller via the wireless network. The AE106 can provide reliable and high speed data transmission from the camera to the controller with minimal interruption.

Enterprise Applications:

As a stand-alone Wi-Fi AP, the AE106 supports up to 5 SSIDs (virtual APs) with enhanced, high-performance layer-3 routing functionality. It is an excellent fit for small to medium sized corporate LAN networks, and is also able to supplement existing legacy 2.4GHz 802.11b/g/n networks, allowing additional high speed wireless connectivity without altering the existing wireless network infrastructure.

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SPECIFICATIONS

Physical Specification

Dimension:262.34mmx117.89mm x52.20mm (H x W x D)

Installation: pole mounting, wall mounting, window mounting or desktop mounting(optional)

1 x GE & PoE interface

Software Reset Function

LEDs:

      Power

      LAN
      Wireless signal strength: 1- 4

Environmental Specification

      Operating temperature:-10℃ to 55℃

      Humidity: 5% - 95% relative humidity
      Weatherproof: IP55
      RoHS6 compliant

Power Supply

Power input:+12V/1A

Powered by PoE (PD)

Power consumption: less than 12W

Antenna Pattern (Built-in Antennas)

Frequency: 5.150GHz - 5.875 GHz

Gain: 16dBi

Cross-polarization isolation: 20dB

MAX VSWR: ≤2

Vertical angle: 30°

Horizontal angle: 40°

Ethernet Interface

One 10/100/1000 Base-T auto-sensing MDI/MDX Gb Ethernet (GE) port

Support IEEE 802.3af PoE, as a standard defined PD

Wi-Fi Interface

Operating mode: CPE/AP

Compliant with MIMO 2×2 IEEE 802.11ac

Operating frequency: 5GHz

      (5.150-5.250,5.250-5.350, 5.470 5.725,5.725-5.875 GHz)

Maximum Transmit power:27dBm

Data rate:802.11a: 6, 9, 12, 18, 24, 36, 48, and 54Mbps

      802.11n: MCS0 - MCS15

      802.11ac: MCS0 - MCS9

Receive sensitivity:

      802.11a:

       90dBm@6Mbps

      -74dBm@54Mbps

      802.11n:

	HT20	HT40
MCS0/8/16	-88dBm	-85dBm
MCS7/15	-71dBm	-68dBm

      802.11ac:

	VHT20	VHT40	VHT80
MCS0	-88dBm	-85dBm	-82dBm
MCS8	-70dBm	/	/
MCS9	/	-61dBm	-58dBm

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ANTENNA PATTERNS

H-POL-E-Plane

H-POL-H-Plane

V-POL-E-Plane

V-POL-H-Plane