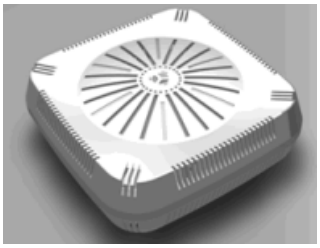
WHG-2011 & WAP-6105

Wireless Controller & Indoor FIT AP



Product Overview

Wireless Controller and Unified Access Point offer the integrated affordable solutions for business users in the SMBs and enterprise as well as the wireless solutions fitting to hotel and school users.
With the scalable and distributed architectures, IT managers can easily design and deploy the wireless networks with centralize management capability.

Key Features and Benefits

Scalability with Advanced Distributed Architecture

Easy on your budget, simple to install and use dynamic rate shifting automatically matches the best connection speed. Separate control path and data path gives you flexibility and configurability.

One controller can manage up to 500 units access point, with up to 4 access controllers in one clustering, with total 2000 access point in total. Through 3+1 redundant allocation, with up to 3 access controllers in one clustering, with 1500 access point in total, which is about 5 to 10 times of the same level of traditional wireless controller.

WAP-6105 includes 16 VAP per radio. Each radio can co-work to different data tunnel switch*. Thus users can re-use their infrastructure investment and provide multiple WISP by multiple data tunnel gateways as flexibility to extend the services.

Load Balance Design

The network is easily scale to accommodate the growth in a cost effective manner. WHG-2011 comes with 1+3 clustering design, which eases the customers to seamlessly purchase more Access Control share the increased heavy loading when customer business growth. The device is also equipped with the mechanism to balance wireless traffic in between APs, such as maximum station limitation per SSID .

Fault Tolerance in Redundant AC & AP

The high availability is the key requirement for enterprise/SMB/Campus networks . To achieve the high availability, whenever there's one specific AC failed, all APs managed by this fail AC will detect this fail case and then discover and link to other AC automatically, the Radio and SSID configuration of the managed AP are also synchrony among clustering AC, so the WLAN service and operation can transfer to new AC seamlessly.

While one specific AP failed, the AC will detect this fail case automatically and increase neighbor AP's transmit power to extend neighbor AP coverage, so all stations associated to this failed AP will connect to neighbor AP with enough wireless signal strength and data rate. the wireless service and operation still be available to WLAN user.

Smart Wireless

5Ghz Wi-Fi Backhaul
With dual band design, 5GHz backhaul provides more stable and durable interconnection between APs than 2.4GHz.

Auto connection (Zero-configuration)
Automatically configuration by AP itself when start up. After setting the same SSID in AP, the WDS link can connect/ build-up automatically, it provide easy maintain effort and fail-over feature.

Multiple WDS link hop
Connect multiple access points without a wire, up to 4 hop of WDS links.

CAPWAP over WDS
Control and provisioning of wireless access points, now available over WDS. Combining the standard provision protocol (CAPWAP) and flexible WDS backhaul connection, the deployment of WLAN will be more flexible and smart management.

Dual radio 2.4GHz/5GHz services
Provide 2.4GHz 802.11b/g/n and 5GHz 802.11a/n services simultaneously. Concurrent dual band service allow users have more flexible association capability and provide more stable and high data rate via 5G band. And, WHG-2011 and the unified APs also provide band steering feature to guide the wireless station to connect to 5GHz band first if station own dual band capability*.

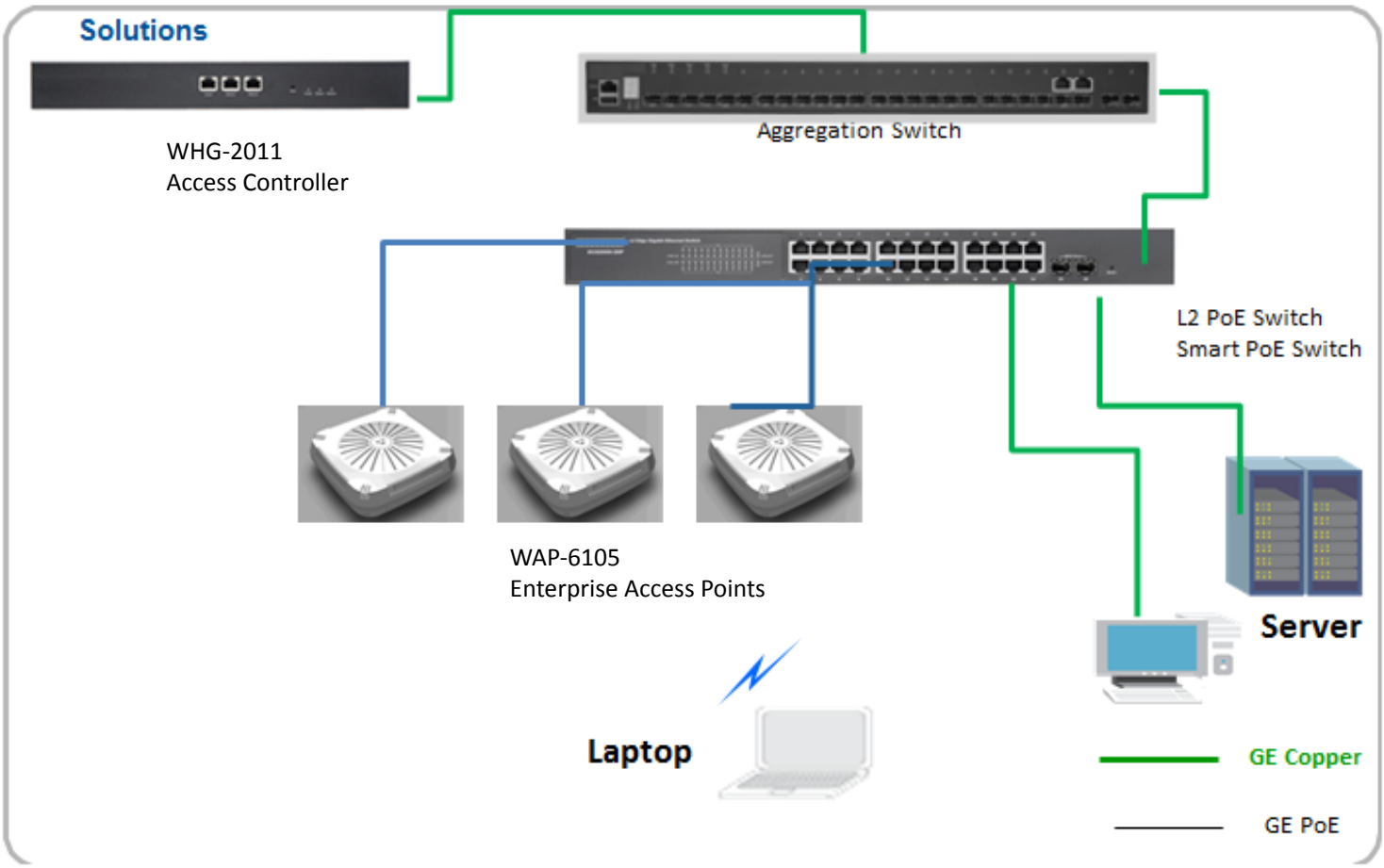
3G Offload Capability

EAP-SIM/EAP-AKA
To support 3G offload, WAP-6105 provide EAP-SIM (GSM) and EAP-AKA (UMTS) pass-through features. Which offers: *Streamlined network access*: Mobile devices will be automatically granted access to the network based upon credentials such as SIM cards, which are widely used in cellular devices today. No user intervention will be required. *Security*: Over-the-air transmissions will be encrypted using the latest-generation security technology (Wi-Fi Certified WPA2-Enterprise).

Captive portal
Use Web Browser as an authentication device.
All mobile device with Web browser can be authenticated by AP/AC and zero foot-print and client-side installation before join to WLAN. the authentication server can be AC built-in captive portal or external customer existed captive portal with Disconnect Message (DM) for pre-pay user and Change of Authorization (CoA) for external Captive Portal*.

Hotspot 2.0 compatible
Access points provides 802.11u compliant hotspot 2.0* features in access points to ease connectivity for wireless ISP.

Accounting
Access points provides classic Radius attributor and customization per customer's request is available in the design.



WHG-2011 Product Specifications

Features

Interfaces
- Console RJ45
- 2 Gigabit Ethernet ports
- 1 Reset bottom
- 3 LEDs: Power/Diag, Ethernet 1, Ethernet 2

WLAN Management Capability
- Up to 500 APs per controller
- Up to 2000 APs per cluster
- Up to 20000 wireless users per controller
- Up to 80000 wireless users per cluster

Access Point Management
- Auto Discovery
- Auto provisioning
- Auto download profile after registration
- Auto AP firmware
- DTLS encryption
- Discovery and keep alive

Central Radio Management
- Profile configuration
  - Radio; VAP; QoS
- Radio configuration(802.11abgn,VAP,data rate)
  - RF management and control.
  - Auto/manual AP channel planning assignment.
  - Auto channel adjustment to avoid interference.
  - Auto/manual RF output power adjustment
- Self healing around failed AP(auto cell recovery)
- Utilization-based load balance*

WLAN Security
- Security
  - 802.1X authentication
  - 802.11i,WEP.WPA/WPA2(enterprise, personal, pre -share key).
  - Local/remote MAC authentication.
  - Web based captive portal

Wireless Intrusion Detection System
- Rogues AP detection, protection, and report.
- Rogues client detection and report.
- Wireless threat classification and mitigating.
- DOS attack detection*.

ACL(access control list).
MAC address black list white list

Management Method
- CLI
- Telnet /SSH(v2)
- TFTP
- HTTP, HTTPS
- Web-based
- SNMP v1/v2C/v3
- Admin user account management
- Password management
- Email alarm
- IPv4/IPv6 dual stack

VLAN
- Configure the VLAN for each SSID, and support the management VLAN

Quality of Service
- QoS,CoS and voice support.
- 802.11e,WMM
- IP DSCP mapping
- 802.1p DSCP mapping wireless user priority
- ACL rule
- Client access rate constraint*
- Maximum concurrent clients association limit
- Airtime performance protection*
- Bandwidth control

Network Monitor (status and statistics)
- Controller status and statistics:
  - View global (total) status and statistics for wireless controller.
  - Total number of management APs
  - Rogues APs
  - Associated clients
  - Traffic statistics.
  - Network utilization.
- Clustered peer controller status and statistics
- AP status and statistics
- Wireless client status and statistics
- Remote packet troubleshooting

Roaming
- Support L2 roaming and L3 roaming between the ACs in the same cluster

L2 Features
- Bridge function
- Spanning Tree Protocol
- L2 ACL
- L2 Isolation (prevent STAs communication in the same AP
- DHCP Relay

Network Management System
- IPv4/IPv6 for SNMP
- Provision
- MAP , heat maps, & status
- Channel info, Rx/Tx rate info, Threshold setting and Alarm
- email alarm & report
- AP traffic statics for the 2 Ethernet ports
- neighbor AP list
- radio status[2] radio coverage [3] radio performance & group report
- configuration backup
- STA session record and statistics
- history statistics
- Group management

Regulatory and Safety Compliance
- EMC: FCC Part 15 (Class A), EN55022 (Class A)

Operating Specifications and Dimensions
- Power: AC input: 100-240V/50~60Hz, DC outpour: 12V/1A
- Operating temperature: 0 to 50 degree C
- Storage temperature: -20 to 70 degree C
- Dimensions: 4.22 (H) x17.00 D) x32.82 (W)cm
- Weight: 3.19lb (1.44Kg)
- Humidity: 5%~ 95%

SW License
- Default: 6 free license
- 20 SW License
- 50 SW License
- 100 SW License

WAP-6105 Product Specifications

Features

Physical Features

- One 10/100/1000BASE-T Gigabit Ethernet (RJ-45) port with 802.3af-compliant Power over Ethernet (PoE) support
- One console port with an RJ-45 connector
- Two LEDs: Power/Diag, WLAN1/WLAN2/LAN
- Four embedded omni antennas
- PoE 802.3af compliant

Standards

IEEE 802.11n 2.4 GHz and 5.0 GHz
IEEE 802.11a 5.0 GHz
IEEE 802.11b/g, 2.4 GHz
IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
IEEE 802.3af Power over Ethernet (PoE)
IEEE 802.11h Regulatory Domain Selection
Wi-Fi Multimedia (WMM)
Wireless Distribution System (WDS)

Wireless Frequency

802.11g/n:
2.4 ~ 2.4835 GHz (US, Canada)
2.4 ~ 2.4835 GHz (ETSI, Japan)

802.11b:
2.4 ~ 2.4835 GHz (US, Canada)
2.4 ~ 2.4835 GHz (ETSI)
2.4 ~ 2.497 GHz (Japan)

802.11a/n:
5.15 ~ 5.25 GHz (lower band) US/Canada, Europe, Japan
5.25 ~ 5.35 GHz (middle band) US/Canada, Europe, Japan
5.725 ~ 5.825 GHz (upper band) US/Canada
5.50 ~ 5.70 GHz Europe

Wireless Features

- VAP (Virtual Access Point) support with up to 16 SSIDs
- Operation modes: AP Mode, Point-to-Point WDS, Point-to-Multiple points WDS, WDS With AP
- Transmit power adjustment
- IEEE 802.11h DFS/DFS2 and automatic TPC
- Traffic Control for each SSID
- Band Preference for same SSID services on dual band
- Dynamic Channel Selection for noisy environment
- Rate Selection to disable low data rate access
- Client connection preemption (n > ag > b) in case service capability is full
- Auto-channel selection

Security

- WEP 64/128-bits
- Wi-Fi Protected Access (WPA/WPA2)
- WPA/WPA2 (PSK) over WDS
- Secure SSH (Secure Sockets Shell), Telnet
- Secure Sockets Layer (SSL) remote management login
- HTTPS
- Access control list
- RADIUS authentication
- EAP-MD5, EAP-TLS, EAP-TTLS, PEAP, EAP-SIM, and EAP-AKA
- SSID broadcast disable

Antenna

Type: PCB type
Gain: 2dBi in 2.4GHz, 3dBi in 5GHz

Regulatory Compliance

FCC Part 15 Subpart B
CE

Radio Signal Certification

FCC Part 15C 15.247, 15.207 (2.4GHz)
EN 300 328
EN 301 489-1
EN 301 489-17
NCC (Taiwan)

Mechanical

Dimensions: 14 x 14 x 4.8 cm (5.51 x 5.51 x 1.88 in.)
Weight: 1.12 lbs (0.51 kg)

Power

Input: 100 or 240 VAC, 50-60 Hz
Output: 48 V/0.38 A
Power Consumption: 10.56 W maximum

Environmental Specification

Temperature:
Standard Operating: 0°C to 40°C (32°F to 104°F)
Storage: -20°C to 70°C (-4°F to 158°F)
Humidity: 15% to 95% (non-condensing)