Product Specifications

1200Mbps Dual Band 802.11ac Outdoor Wireless AP

WDAP-802AC

Version 1.0

Change History:

Revision	Date	Author	Change List
Version 1.0	2017-12-02	Miki Chou	Initial release

Author	Miki Chou	Editor:	Miki Chou
Approved by:	Kent Kang	Project Leader:	Kent Kang

1. PRODUCT DESCRIPTION

Ultra-high-speed, Enterprise Outdoor Wireless Solution

To meet enterprise demand for outdoor wireless communication, PLANET WDAP-802AC 1200Mbps Dual Band 802.11ac Outdoor Wireless AP has a weatherproof IP68-rated enclosure and supports central management through PLANET AP controllers. With IEEE 802.11ac 2T2R dual-band technology, the WDAP-802AC provides a maximum wireless speed of 867Mbps at 5GHz and 300Mbps at 2.4GHz. With flexible N-type antenna connectors and dual radios, it is ideal to integrate with various outdoor applications specially used for long-distance deployments.

Powerful Dual-band Outdoor WLAN Solution

PLANET WDAP-802AC, adopting the IEEE 802.11ac standard, provides a high-speed transmission of power and data, meaning two remote nodes in the **5GHz** frequency band can be bridged. The **2.4GHz** wireless connection can also be used simultaneously. Its fully-protected hardware design makes it capable to ward off direct lightning strikes and unpredictable harsh weathers. Furthermore, the WDAP-802AC adopts the high-class Qualcomm Atheros SoC (System-on-a-Chip), which provides higher stability to meet the stringent requirements of outdoor solution.

Advanced Security and Rigorous Authentication

The WDAP-802AC supports 128-bit WEP, WPA / WPA2, WPA-PSK and WPA2-PSK wireless encryptions, the advanced WPA2-AES mechanism and 802.1X RADIUS authentication, which can effectively prevent eavesdropping by unauthorized users or bandwidth occupied by unauthenticated wireless access. Furthermore, any users are granted or denied access to the wireless LAN network based on the ACL (Access Control List) that the administrator pre-established. For management purposes, the IEEE 802.1Q VLAN supported allows multiple VLAN tags to be mapped to multiple SSIDs to distinguish the wireless access.

Flexible and Reliable Outdoor Characteristics

The WDAP-802AC is definitely suitable for wireless IP surveillance, and bridge link of building to building and backbone of public service. Additionally, the self-healing capability keeps connection alive all the time. Meeting the IP68 rating, the WDAP-802AC can perform normally under rigorous weather conditions, meaning it can be installed in any harsh, outdoor environments. With the standard IEEE802.3at Power over Ethernet (PoE) design, the WDAP-802AC can be easily installed in the areas where power outlets are not available.

Easy Deployment and Management

With user-friendly Web UI, real-time channel utilization, automatic transmission of power and distance control, the WDAP-802AC is easy to deploy and manage, even for users who never experience in setting up a wireless network. Furthermore, with the PLANET SNMP-based management controller and the Smart Discovery utility, the WDAP-802AC is convenient to be managed remotely.

2. PRODUCT FEATURES

- **Industrial Compliant Wireless LAN and LAN**
  - Compliant with the IEEE 802.11a/b/g/n/ac wireless technology
  - 802.11ac 2T2R MU-MIMO architecture with data rate of up to 1200Mbps (300Mbps at 2.4GHz and 867Mbps at 5GHz)
  - Equipped with 10/100/1000Mbps RJ45 port, auto MDI/MDI-X supported
- **RF Interface Characteristics**
  - Built-in four N-type antenna connectors
  - High output power with multiply-adjustable transmit power control
- **Outdoor Environmental Characteristics**
  - IP68-rated protection, IEEE 802.3at PoE design
  - Rugged protection with aluminum extrusion case and ground terminal
  - Operating temperature: -40~70 degrees C
- **Multiple Operation Modes and Wireless Features**
  - Multiple operation modes: AP, Gateway, Repeater, WDS, WISP
  - WMM (Wi-Fi multimedia) provides higher priority to multimedia transmitting over wireless
  - Coverage threshold to limit the weak signal of clients occupying session
  - Real-time Wi-Fi channel analysis chart and client limit control for better performance

➢ **Secure Network Connection**

- Full encryption supported: 64-/128-bit WEP, WPA/WPA2, WPA-PSK/WPA2-PSK and 802.1X RADIUS authentication
- Supports 802.1Q VLAN and SSID-to-VLAN mapping
- Supports IP/Port/MAC address/URL filtering, DoS, SPI Firewall
- Supports DMZ and Port forwarding
- Bandwidth control per IP address to increase network stability

➢ **Easy Deployment and Management**

- Supports PLANET AP Controllers in AP mode
- Easy discovery by PLANET Smart Discovery
- Self-healing mechanism through system auto reboot setting
- System status monitoring through remote Syslog Server
- Supports PLANET DDNS/ Easy DDNS

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

CPU	Atheros QCA9563
2.4GHz RF	Atheros QCA9882
5GHz RF	Atheros QCA8334
RAM	128MB
Flash	16MB

3.2 FUNCTIONAL SPECIFICATIONS

Product	**WDAP-802AC**
	1200Mbps Dual Band 802.11ac Outdoor Wireless AP
Hardware	
Standard Support	IEEE 802.11ac IEEE 802.11n IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11i IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab 1000BASE-T IEEE 802.3x flow control
Material	Aluminum
Dimensions (W x D x H)	225 x 101.5 x 225mm
Weight	4kg
Power Requirement	48V 0.5A, IEEE 802.3at PoE+
Power Consumption (max.)	< 25.5W
Mounting Type	Mast mounting
Interface	Wireless IEEE802.11a/b/g/n/ac, 2T2R PoE LAN: 1 x 10/100/1000BASE-T, auto-MDI/MDIX, 802.3at PoE In
Button	Reset button (Inside enclosure)
Antenna	Built-in four N-type connectors
Data Rate	IEEE 802.11b: up to 11Mbps IEEE 802.11a/g: up to 54Mbps IEEE 802.11n (20MHz): up to 150Mbps IEEE 802.11n (40MHz): up to 300Mbps 802.11ac (VHT20): Up to 173.3Mbps 802.11ac (VHT40): Up to 400Mbps 802.11ac (VHT80): Up to 867Mbps
Media Access Control	CSMA/CA

<table>
<tr><td>Modulation</td><td>802.11ac: OFDM (BPSK/ QPSK/ 16QAM/ 64QAM/ 256QAM)
802.11a/g/n: OFDM (BPSK/ QPSK/ 16QAM/ 64QAM)
802.11b: DSSS (DBPSK/ DQPSK/ CCK)</td></tr>
<tr><td>Frequency Band</td><td>2.4GHz:
FCC: 2.412~2.462GHz
ETSI: 2.412~2.472GHz

5GHz:
FCC: 5.180~5.240GHz, 5.745~5.825GHz
ETSI: 5.180~5.700GHz</td></tr>
<tr><td>Operating Channels</td><td>2.4GHz:
FCC: 1~11 Channels
ETSI: 1~13 Channels

5GHz:
FCC: 36, 40, 44, 48, 149, 153, 157, 161, 165 (9 Channels)
ETSI: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 132, 136, 140 (16 Channels)

5GHz channel list will vary in different countries according to their regulations.</td></tr>
<tr><td>Max. Transmit Power (dBm)</td><td>FCC: up to 29 ± 1dBm
ETSI: < 20dBm (EIRP)</td></tr>
<tr><td>Receiver Sensitivity

(dBm)</td><td>
<table>
<tr><th>Network Mode</th><th>Data Rate</th><th>Receive Sensitivity (dBm)</th></tr>
<tr><td colspan="3">2.4GHz</td></tr>
<tr><td rowspan="2">802.11b</td><td>1Mbps</td><td>-99</td></tr>
<tr><td>11Mbps</td><td>-92</td></tr>
<tr><td rowspan="2">802.11g</td><td>6Mbps</td><td>-95</td></tr>
<tr><td>54Mbps</td><td>-82</td></tr>
<tr><td rowspan="2">802.11n HT20</td><td>MCS0/MCS8</td><td>-95</td></tr>
<tr><td>MCS7/MCS15</td><td>-77</td></tr>
<tr><td rowspan="2">802.11n HT40</td><td>MCS0/MCS8</td><td>-93</td></tr>
<tr><td>MCS7/MCS15</td><td>-75</td></tr>
<tr><td colspan="3">5GHz</td></tr>
<tr><td rowspan="2">802.11a</td><td>6Mbps</td><td>-92</td></tr>
<tr><td>54Mbps</td><td>-75</td></tr>
<tr><td rowspan="2">802.11n HT20</td><td>MCS0/MCS8</td><td>-91</td></tr>
<tr><td>MCS7/MCS15</td><td>-72</td></tr>
<tr><td rowspan="2">802.11n HT40</td><td>MCS0/MCS8</td><td>-88</td></tr>
<tr><td>MCS7/MCS15</td><td>-70</td></tr>
<tr><td rowspan="2">802.11ac VHT20</td><td>MCS0</td><td>-92</td></tr>
<tr><td>MCS8</td><td>-70</td></tr>
<tr><td rowspan="2">802.11ac VHT40</td><td>MCS0</td><td>-89</td></tr>
<tr><td>MCS9</td><td>-65</td></tr>
<tr><td rowspan="2">802.11ac VHT80</td><td>MCS0</td><td>-87</td></tr>
<tr><td>MCS9</td><td>-61</td></tr>
</table>
</td></tr>
</table>

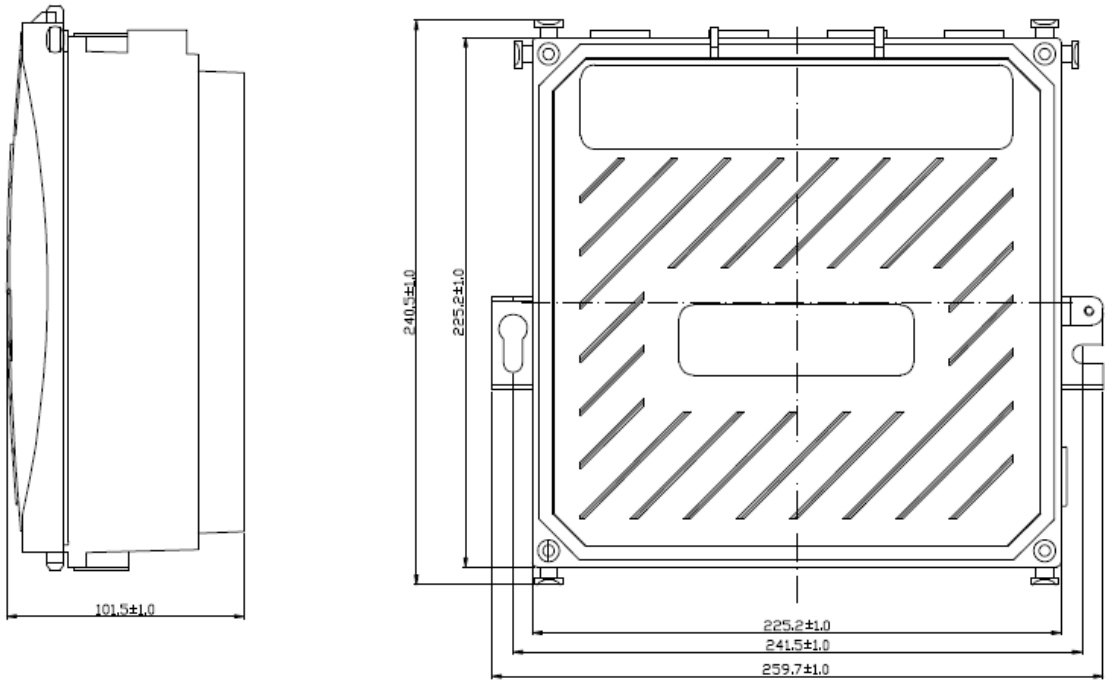
Environment & Certification	
Operating Temperature	-40~70 degrees C
Operating Humidity	10~90% (non-condensing)
IP Level	IP68
ESD Protection	± 8kV air-gap discharge ± 4kV contact discharge
Surge Protection	± 4kV
Regulatory	CE, RoHS
Software	
LAN	Static IP
	Supports IP-MAC binding
WAN Type (GW/WISP mode)	■ Static IP ■ Dynamic IP ■ PPPoE
Wireless Modes	■ Access Point ■ Gateway ■ Repeater ■ WDS (AP/Bridge/Station) ■ WISP
Channel Width	20MHz, 40MHz, 80MHz
Encryption Type	64-/128-bit WEP, WPA, WPA-PSK, WPA2, WPA2-PSK, 802.1X
Wireless Security	Enable/Disable SSID Broadcast
	Wireless MAC address filtering
	User Isolation
Max. SSIDs	4
Max. Wireless Clients	64 per radio (50 is suggested, depending on usage)
Max. WDS Peers	4
Wireless QoS	Supports Wi-Fi Multimedia (WMM)
Wireless Advanced	Auto Channel Selection
	5-level Transmit Power Control (100%, 75%, 50%, 25%, 12.5%)
	Client Limit Control, Coverage Threshold
	Distance control (Auto Ack Timeout)
	Wi-Fi channel analysis chart
	Fast Roaming
Status Monitoring	Device status, Wireless client List
	PLANET Smart Discovery
	DHCP client table
	System Log supports remote syslog server
VLAN	IEEE 802.1Q VLAN (VID: 3~4094)

	SSID-to-VLAN mapping up to 4 SSIDs
Self-healing	Supports auto reboot settings per day/hour
Management	Supports PLANET Hardware AP Controller/ Software AP Controller Applicable controllers[1]: WAPC-500, WAPC-1000, SAPC
	Remote management through PLANET DDNS/ Easy DDNS
	Configuration backup and restore
	Supports UPnP
	Supports IGMP Proxy
	Supports PPTP/L2TP/IPSec VPN Pass-through
	SNMP v1/v2c/v3 support, MIB I/II, Private MIB
Remarks	1. ^ the feature will be supported through firmware/system upgrade

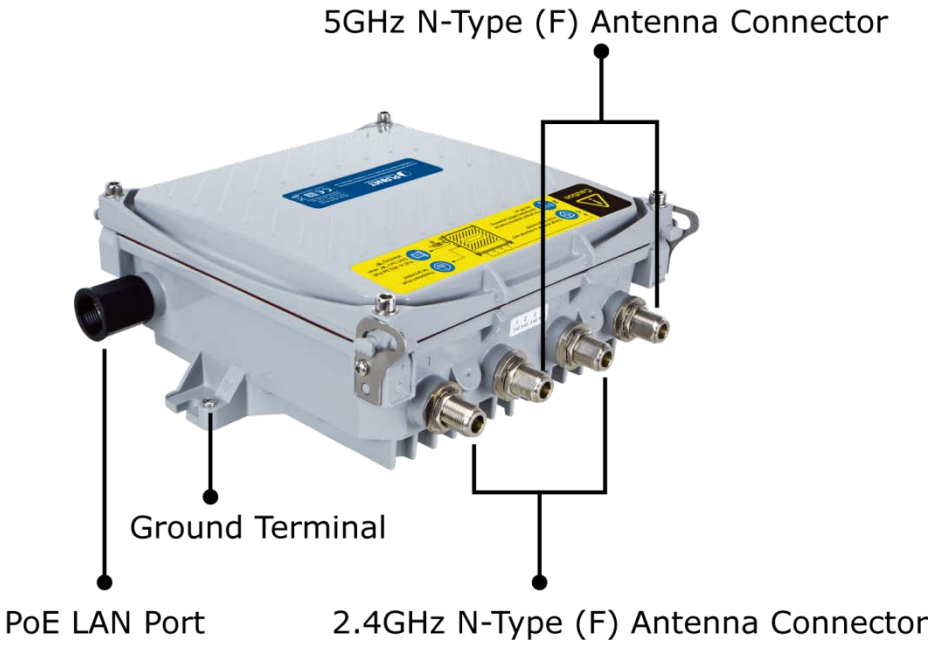
3.3 PHYSICAL SPECIFICATIONS

Physical Specifications	
Dimensions (W x D x H)	225 x 101.5 x 225mm
Weight	4kg

Appearance



Port & Connector



Hardware Interface Definition

Object	Description
Antenna Connectors	4 N-type (female) antenna connectors
PoE LAN Port	10/100/1000Mbps RJ45 port, auto MDI/MDI-X 802.3at PoE+ supported, 48VDC In
Reset Button	Press and hold the **Reset** button on the PCBA for over 15 seconds to return to the factory default setting.
Grounding Terminal	The grounding wire must be attached to this port to prevent damage to the AP from direct lightning strike.

3.4 ENVIRONMENTAL SPECIFICATIONS

Environmental Specifications	
Temperature	Operating: -40 ~ 70 degrees C Storage: -40 ~ 75 degrees C
Humidity	Operating: 10 ~ 90% (non-condensing) Storage: 5 ~ 90% (non-condensing)

3.5 BASIC PACKAGING

- WDAP-802AC x 1
- Quick Installation Guide x 1
- RJ45 Waterproof Kit x 1
- Backplane x 1
- L-type Bracket x 1
- Screw Set x 1
- U-bolt Kit x 2

3.6 PACKAGING INFORMATION

Packaging Information	
Dimensions (W x D x H)	410 x 316 x 200mm
Weight	4.17kg (gross weight)

APPENDIX: Default Settings

System	
Device Name	WDAP-802AC
Firmware Version	1.0
Connection Type (LAN IP)	Static IP
IP Address	192.168.1.253
Gateway	192.168.1.253
Subnet Mask	255.255.255.0
Wireless Settings	
Operation Mode	Access Point
Mode	802.11AN/AC
Band Width	80MHz
SSID	PLANET_2.4GHz PLANET_5GHz
Channel	2.4G: 6 5.8G: 36 (ETSI region)/ 149 (FCC region)
Wireless Advanced Settings	
RF Output Power	100%
Data Rate	Auto
Transmit Power	Auto
RTS Threshold (0-2347)	2346
Max User (0-64)	64
Coverage Threshold (-95~-65dBm)	-90