

Product Specifications

600Mbps 802.11n Outdoor Wireless CPE

WDAP-8350

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Change History:

Revision	Date	Author	Change List
Version 1.0	2015-10-29	Miki Chou	Initial release

Author	Miki	Editor:	Miki
Approved by:	Tom	Project Leader:	Kent

1. PRODUCT DESCRIPTION



Powerful Dual-Band Outdoor WLAN Solution

PLANET WDAP-8350 comes with a high transmission power of **500mW** which can bridge two remote nodes in **5GHz** frequency band and provides clients with **2.4GHz** wireless access over longer distance range. Its fully-protected hardware design makes it capable to ward off direct lightning strikes and unpredictable harsh weathers. Furthermore, the WDAP-8350 adopts the high-class Qualcomm Atheros SoC (System-on-a-Chip) and **Dual-OS Backup** mechanism that provide higher stability to meet the stringent requirements of outdoor solution.

More Flexible for Outdoor Environments

With its dual-RF design and by connecting optional specific types and higher gain antennas to its **N-Type** antenna connectors, the WDAP-8350 can adapt to various applications including connecting IP cameras at multiple locations to the security control center to deploy a surveillance system, or relaying the wireless signal from the urban to the suburban to provide wireless internet service to rural residents simultaneously. With the WDAP-8350, an outdoor wireless infrastructure can be speedily deployed, thus realizing the setting up of an outdoor, long-distance, dual-purpose unit.

All-Weather Rugged Protection

With the **IP66** rated aluminum housing, **Surge Arrester**, **Heater** design and wide-ranging of operating temperature from **-40 to 70** degrees C, PLANET WDAP-8350 can perform normally under rigorous weather conditions, including thunderstorms, and hot and cold climates, thus maintaining the connection as stable as that in the general environments.

Seamless Failover and Roaming

In the actual user experience, a redundant setup is important in that the WDAP-8350 enables the auto failover mechanism to activate by using dual images (Dual-OS) while if the active OS fails, it can immediately switch to the standby OS. That can eliminate the difficulty of real-time support in long distance and make failover as simple as possible. Furthermore, it enhances handover of clients between APs by improving the

handshaking process to promote better performance, thus reducing the handoff times between APs and associated clients, which means it can quickly handover to the nearby AP without any disconnection. Benefiting from the auto-backup and fast-roaming, the WDAP-8350 is able to achieve a non-disruptive path failover and seamless roaming.

High-efficiency and Practical Solution to Separate Various Applications

PLANET WDAP-8350 supports multiple SSIDs (16 sets of SSIDs for each band) to allow each virtual wireless network to have a different set of security and also capable to map each VAP to specific virtual network through the use of VLAN tagging which enables isolation of guest and corporate networks. In addition, its dynamic rate adaptation mechanism for multicast guarantees the wireless bandwidth and service quality or the fixed rate of video streaming, which prevents from capacity wasting of multicast packets thus utilizing the available bandwidth with more efficiency.

Advanced Value-added Characteristics

Featuring an **IPv4/IPv6** dual-stack network, the WDAP-8350 can work with the original IPv4 network structure and also support the cutting-edge IPv6 network, which provides migration from the IPv4 to IPv6 network with ease. With the dynamic power saving mode implementation, it is capable to detect the traffic loading, which consumes low standby power automatically, thus reducing power consumption by less than 30%.

Easy Deployment and Management

Compliant with **IEEE 802.3at PoE+** (Power over Ethernet) standard, the WDAP-8350 can be powered by a single UTP cable besides providing data transmission. It thus reduces the needs of extra cables and dedicated electrical outlets which are difficult to reach in outdoor environment. It enables the wireless LAN deployment to become more flexible and worry-free from the power outlet locations. Moreover, with the Planet Smart Discovery Utility, the WDAP-8350 is convenient to be configured remotely and with the Wireless Location Management, it is easy to locate online clients' information.

2. PRODUCT FEATURES

- **Industrial-grade Wireless LAN**
 - Compliant with IEEE 802.11n 2T2R MIMO with backward compatible with 802.11a/b/g standard
 - Simultaneous 2.4GHz and 5GHz wireless connectivity
 - Equipped with Gigabit LAN and 600Mbps wireless connectivity (Dual-N Band)
 - IPv4 and IPv6 dual-stack management networks

- **Radio and Outdoor Characteristics**
 - Built-in 4 N-Type (Female) antenna connectors
 - High output power up to 500mW with multiple adjustable transmit power control
 - Built-in surge arrester and ground terminal for protection against lightning strikes
 - IP66 aluminum case protection
 - IEEE 802.3at PoE design
 - Wide operating temperature of -40 ~ 70 degrees C
 - Built-in Heater (will auto-launch at -30 degrees C) prevents freeze in harsh environment

- **Wireless Feature Characteristics**
 - Dual-N band performs backhaul WDS link at 5GHz and relay wireless signal at 2.4GHz
 - Multiple wireless modes: AP, WDS PtP and WDS PtMP
 - Supports up to 16 multiple-SSIDs at each frequency band
 - Multicast rate adaptation guarantees wireless bandwidth and service quality
 - Automatic ACK timeout detection smart for long-range connection

- **Secure and Highly-reliable Network Management**
 - Advanced 128-bit WEP, WPA/WPA2, WPA-PSK/WPA2-PSK(TKIP/AES) security, and 802.1x authentication
 - Supports IEEE 802.1Q tagged VLAN over WDS or mapping up to 32 SSIDs
 - Dual-image (dual-OS) backup mechanism
 - Easy Web-based UI and PLANET Smart Discovery supported
 - Telnet command line interface
 - Auto power saving mode reduces power consumption by 30%
 - Easily locate online clients information through the Wireless Location Management
 - System status monitoring includes statistics and associated client list

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

CPU / 2.4GHz RF	Atheros AR9344
5GHz RF	Atheros AR9582
DDRII SDRAM	128MB
Flash	32MB

3.2 FUNCTIONAL SPECIFICATIONS

Product	WDAP-8350 600Mbps 802.11n Dual Band Outdoor Wireless CPE
Hardware	
Interface	Wireless: IEEE 802.11n concurrent 2.4GHz and 5GHz, 2T2R MIMO LAN: 10/100/1000BASE-T, auto-MDI/MDIX, IEEE 802.3at PoE PD
Antenna	Built-in 4 N-Type (female) antenna connectors with surge arrestor ※ The outdoor antennas need to be purchased separately
Button/Connector	Reset button, ground terminal, ground lug
LED	PWR, LAN, 2.4G, 5G
Material	Aluminum
Dimensions (W x D x H)	220 x 95 x 220mm
Weight	2.34kg
Power Requirement	IEEE 802.3at PoE+
Power Consumption (max.)	< 24W (high-loading and heater) < 7W (power saving mode)
Mounting Type	Mast, wall mount
Wireless Interface Specifications	
Wireless Standard	IEEE 802.11a/n 5GHz IEEE 802.11b/g/n 2.4GHz
Antenna Structure	802.11n: 2T2R MIMO at each frequency band
Data Rate	IEEE 802.11b: 1, 2, 5.5, 11Mbps IEEE 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54Mbps IEEE 802.11n (20MHz): up to 150Mbps IEEE 802.11n (40MHz): up to 300Mbps at each frequency band
Media Access Control	CSMA/CA
Modulation Type	802.11a/g/n: OFDM (BPSK/QPSK/16QAM/64QAM) 802.11b: DSSS (DBPSK/DQPSK/CCK)
Band Mode	2.4G and 5G concurrent mode

Frequency Range	2.4GHz: 2.400 ~ 2.484GHz 5GHz: 5.150 ~ 5.850GHz	
Operating Channel	2.4GHz	America -- FCC: 1~11 Europe -- ETSI: 1~13
	5GHz	America -- FCC: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149, 153, 157, 161, 165 (total 24 channels) Europe -- ETSI: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 132, 136, 140 (total 16 channels) ※ 5GHz channel list may be vary in different countries and may be restricted to abide by regional regulatory compliance.
Channel Width	20MHz / 40MHz	
Max. RF Power	27dBm for all rate levels and modulation modes	
Output Power Control	1 ~ 100%	
Software Features		
Wireless Mode	<ul style="list-style-type: none"> ■ AP ■ WDS PTP ■ WDS PTMP 	
Wireless Encryption	<ul style="list-style-type: none"> ■ WEP (64/128-bit) encryption security ■ WPA / WPA2 (TKIP/AES) ■ WPA-PSK/WPA2-PSK (TKIP/AES) ■ 802.1x authentication 	
Wireless Advanced	Enable/Disable SSID broadcast	
	Max. associated station number restriction	
	Multiple SSIDs: up to 16 at 2.4GHz and 16 at 5GHz	
	Supports multiple VLANs mapping to multiple SSIDs	
	Supports fast roaming across APs	
	Provides wireless statistics	
Max. Wired Client	Unlimited	
Max. Wireless Client	Theoretical value: 127 at each band Recommended value: 50 at each band	
Max. WDS Peers	Up to 16 at 2.4GHz and 16 at 5GHz	
QoS	Supports multicast rate adaptation mechanism to guarantee the wireless bandwidth and service quality	
LAN	Static IP, DHCP	

	IPv4 and IPv6 dual-stack management network
	Supports 802.1Q tagged VLAN
System Management	<p>Web-based (HTTP) and Telnet command line Interface</p> <p>Supports NTP synchronization</p> <p>Easy firmware upgrade via HTTP/TFTP</p> <p>Easy system backup/restore via HTTP/TFTP</p> <p>Easily locate online clients information through the Wireless Location Management</p> <p>Supports Dual-OS auto-backup mechanism</p> <p>Supports Auto Power Saving Mode mechanism</p> <p>Supports PLANET Smart Discovery Utility</p>
Standards Conformance	
Standard Compliance	<p>IEEE 802.11n (2T2R, dual-N band up to 600Mbps)</p> <p>IEEE 802.11a</p> <p>IEEE 802.11g</p> <p>IEEE 802.11b</p> <p>IEEE 802.11i</p> <p>IEEE 802.3 10BASE-T</p> <p>IEEE 802.3u 100BASE-TX</p> <p>IEEE 802.3ab 1000BASE-T</p>
Other Protocols and Standards	CSMA/CA, CSMA/CD, TCP/IP, DHCP, ICMP, SNMP
Environment & Certification	
Temperature	<p>Operating: -40 ~ 70 degrees C</p> <p>Storage: -40 ~ 75 degrees C</p> <p>※ Built-in Heater (will auto-launch at -30 degrees C)</p>
Humidity	<p>Operating: 10 ~ 95% (non-condensing)</p> <p>Storage: 5 ~ 95% (non-condensing)</p>
IP Level	IP66
ESD Protection	<p>±15kV air-gap discharge</p> <p>±8kV contact discharge</p>
Surge Protection	<p>±6kV line to ground</p> <p>±2kV line to line</p>
MTBF	<p>1553658 hrs at 25 degrees C</p> <p>335788 hrs at 60 degrees C</p>
EMC Emissions Class	B
Regulatory Compliance	CE, FCC, RoHS

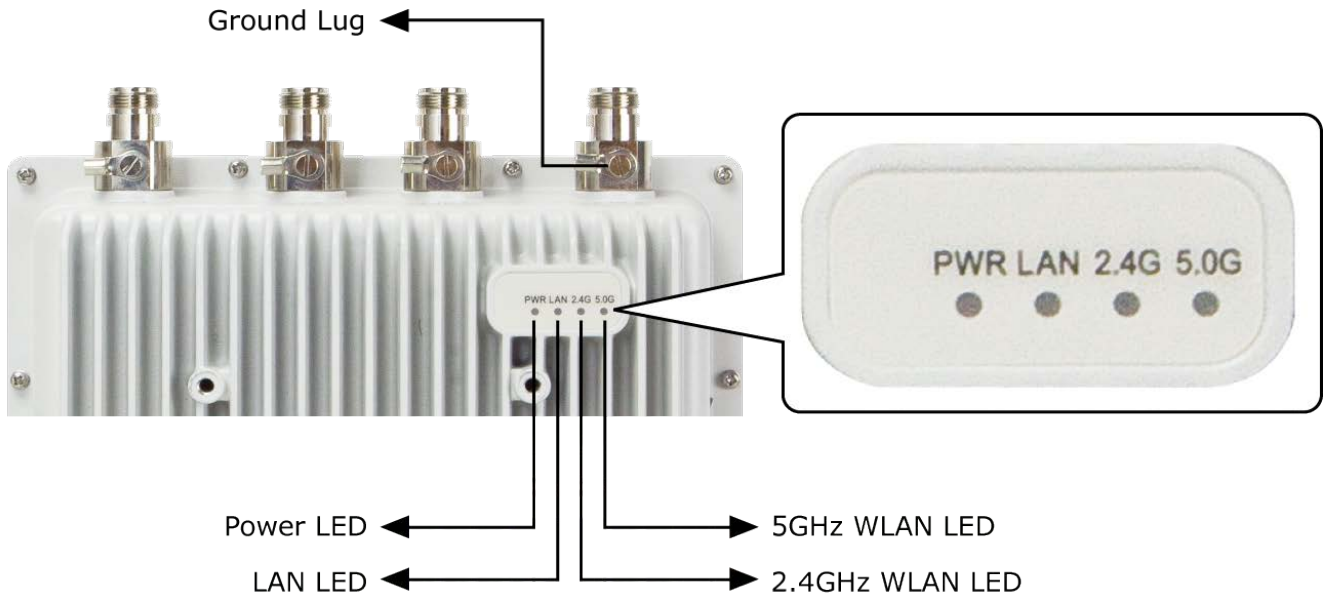
3.3 PHYSICAL SPECIFICATIONS

Physical Specifications	
Dimensions (W x D x H)	220 x 95 x 220mm
Weight	2.34 ± 5g (gross weight)

Appearance



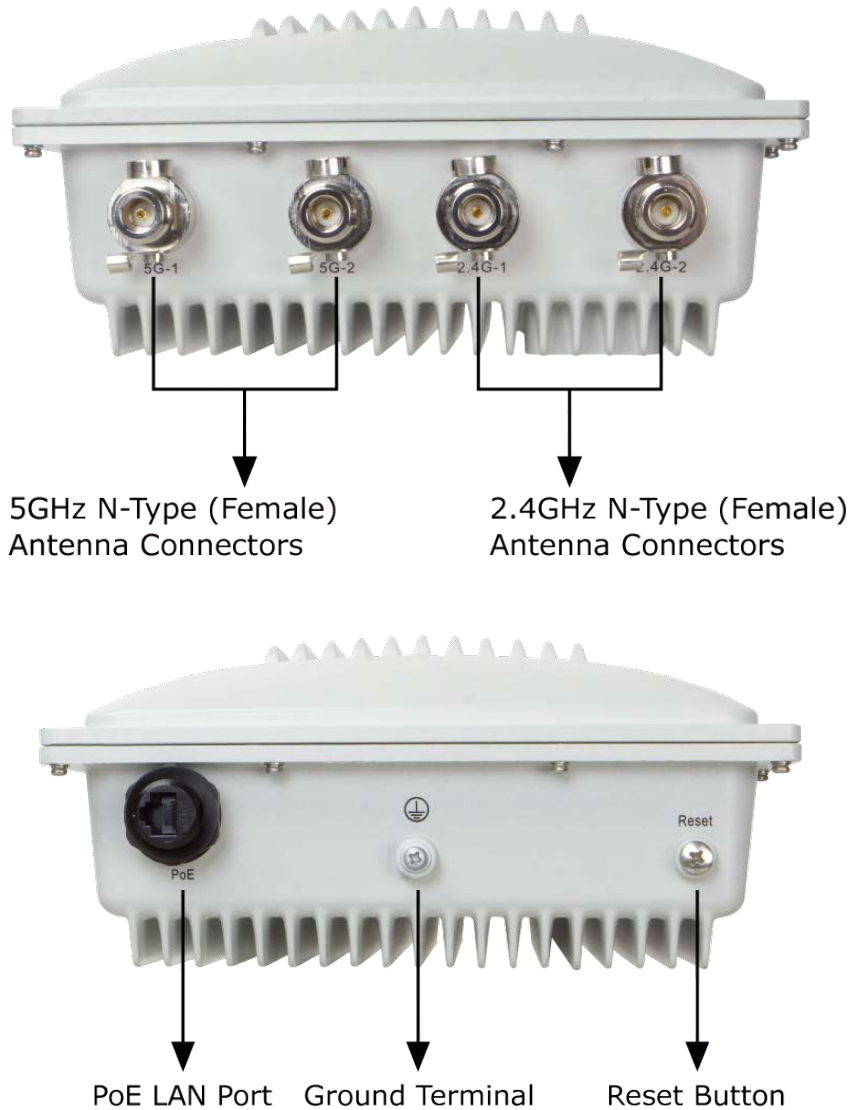
Rear Panel – LED



LED definition

LED	Color	State	Meaning
Power	Green	On	The AP is powered on.
		Off	The AP is powered off.
LAN	Green	On	Port linked
		Off	No link
2.4G	Green	On	2.4G radio is on.
		Blinking	Data is transmitting or receiving on the 2.4GHz.
		Off	2.4G radio is off.
5.0G	Green	On	5G radio is on.
		Blinking	Data is transmitting or receiving on the 5GHz.
		Off	5G radio is off.

Bottom Panel – Port & Connector



H/W Interface definition

Object	Description
Antenna Connector	4 N-type (Female) antenna connectors Built-in surge arrester on each antenna connector
PoE LAN Port	10/100/1000Mbps RJ-45 port, auto MDI/ MDI-X IEEE 802.3at PoE/PD supported, Class 4
Reset Button	Press the Reset button on the device for over 5 seconds to return to the factory default setting.

3.4 ENVIRONMENTAL SPECIFICATIONS

Environmental Specifications	
Temperature	Operating: -40 ~ 70 degrees C Storage: -40 ~ 75 degrees C
Humidity	Operating: 10 ~ 95% (non-condensing) Storage: 5 ~ 95% (non-condensing)

3.5 BASIC PACKAGING

- WDAP-8350 x 1
- Backplane & Mounting Bracket x 1set
- Mounting Kit x 1
- RJ45 Waterproof Kit x1
- Stainless Tight Hoop Strip x2
- Quick Installation Guide x 1

3.6 PACKAGING INFORMATION

Packaging Information	
Dimensions (L x W x H)	515 x 318 x 168 mm
Weight	4.34 ± 5g (gross weight)

APPENDIX: Default Settings

System	
Device Name	WDAP-8350
Host Name	WLAN-AP
System Time	Thu Jan 1 08:00:00 UTC+0800 1970
Hardware Version	R5
Management VLAN ID	1
Untagged VLAN	Enabled
Untagged VLAN ID	1
Connection Type (LAN IP)	DHCP
IP Address	192.168.1.10
Gateway	192.168.1.254
Subnet Mask	255.255.255.0
IPv6 Connection Type	Static IP
Wireless Settings	
Mode	Radio 1 (2.4G): IEEE 802.11b/g/n Radio 2 (5G): IEEE 802.11a/n
Channel	Radio 1 (2.4G): Auto (Channel list: 1~13) Radio 2 (5G): Auto (Channel list: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 132, 136, 140, total 16 channels)
Mode	Access Point
SSID	Radio 1: PLANET_AP_2G Radio 2: PLANET_AP_5G
Country	GB – United Kingdom
Radio	
Short Guard Interval Supported	Yes
STBC Mode	On
Protection	Off
Beacon Interval	100 ms (millisecond, 40 - 2000)
DTIM Period	1 (Range: 1-255)
Fragment Threshold	2346 bytes (Range: 256-2346, even numbers)
Distance	1km (range: 1~30km)

ACK Timeout	64
RTS Threshold	2346 (Range: 256-2346)
Maximum Stations	200
TX Power	100 (Percent, range: 1 – 100, 100 =27dBm)
Fixed Multicast Rate	Auto