Product Specifications

2.4GHz 802.11n 300Mbps Outdoor Wireless CPE

WBS-202N

Version 1.0

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Change History:

Revision:	Date:	Author:	Change List:
Version 1.0	2018-5-14	Solo Hsu	Initial release

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Approved by:	Miki Chou	Project Leader:	Kent Kang

1. PRODUCT DESCRIPTION

Cost-effective Wireless Solution with Superior Performance

PLANET WBS-202N 802.11n 300Mbps Outdoor Wireless CPE offers a better range and excellent throughput than those of the traditional 802.11g wireless device. Via the embedded **14dBi dual-polarization** (vertical and horizontal) directional antenna, the WBS-202N provides good diversity coverage and high transmitting power, thus heightening the performance of a long-distance, outdoor connectivity even when the environment is flooded with many 2.4GHz wireless devices.

Designed for Heavy Data Transmission Traffic

With larger memory capacity and faster CPU clock speed, the WBS-202N is capable of withstanding high frequency of user access and heavy data transmission traffic in the densely-populated area. To have a suitable coverage threshold, the product can flexibly control the client access, efficiently limit unreachable clients and retain bandwidth for authorized users. To provide maximum performance, the WBS-202N can implement up to 8 operation modes where a multitude of applications in communities, warehouses, campuses, harbors, etc. can be made.

Multiple SSIDs with VLAN Tagging

The WBS-202N supports WPA/WPA2, and the 802.1X RADIUS authentication to secure the wireless connection. Besides, the supported IEEE 802.1Q VLAN allows multiple VLAN tags to be mapped to multiple SSIDs to distinguish the wireless access. This makes it possible for the WBS-202N to work with managed Ethernet switches to have VLANs assigned to a different access level and authority.

Flexible and Reliable Outdoor Characteristics

The WBS-202N 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. With the **IP55-rated** outdoor enclosure, the WBS-202N can perform normally under rigorous weather conditions, meaning it can be installed in any harsh, outdoor environments. With the flexible DC input or **Power over Ethernet (PoE)** option, the WBS-202N can be easily installed depending on the environmental condition.

3 Simple Steps to Set Up WDS

Without needing to enter the Web interface for configuration, the WBS-202N needs three simple steps to establish the WDS PtP connection without any difficulty. By just clicking the **Pair** button on the WBS-202N and within 2 minutes, you can connect two WBS-202Ns without complicated configuration.

Advanced Security and Rigorous Authentication

The WBS-202N supports 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.

Optimized Efficiency in AP Management

The brand-new GUI configuration wizard helps the system administrator easily set up the WBS-202N step by step. Besides, the built-in Wi-Fi analyzer provides real-time channel utilization to prevent channel overlapping to assure greater performance. With the automatic transmission power mechanism, distance control and scheduling reboot setting, the WBS-202N is easier for the administrator to deploy and manage without on-site maintenance. Moreover, you can simply install PLANET AP controller software, **SAPC** (**S**mart **AP C**ontrol), to deliver wireless profiles to multiple APs simultaneously, thus making the central management simple.

2. PRODUCT FEATURES

- **Industrial Compliant Wireless LAN and LAN**
  - Compliant with the IEEE 802.11b/g/n wireless technology
  - 2T2R architecture with data rate of up to 300Mbps
  - Equipped with two 10/100Mbps RJ45 ports with auto MDI/MDI-X supported
- **Fixed Network Broadband Router**
  - Supported WAN connection types: DHCP, Static IP, PPPoE
  - Supports Port Forwarding and DMZ for various networking applications
  - Supports DHCP server in Gateway/WISP mode
- **RF Interface Characteristics**
  - Built-in 14dBi dual-polarization antenna
  - High output power with multiply-adjustable transmit power control
- **Outdoor Environmental Characteristics**
  - IP55 rating
  - IEEE 802.3at Power over Ethernet design
  - Operating temperature: -20~70 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: 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 Installation and Management**
  - 3 simple steps to establish WDS connection easily
  - 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

SoC	Qualcomm Atheros QCA9531
RAM	128MB
Flash	16MB

3.2 FUNCTIONAL SPECIFICATIONS

Product	**WBS-202N**
	300Mbps 802.11n Outdoor Wireless CPE
Hardware	
Standard Support	IEEE 802.11b/g/n IEEE 802.11i IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3x flow control
Dimensions (W x D x H)	87 x 38 x 260mm
Weight	405g
Power Requirement	48V 0.5A, IEEE 802.3at PoE+
Power Consumption (max.)	< 13W
Interface	Wireless IEEE 802.11a/n, 2T2R PoE: 1 x 10/100BASE-TX, auto-MDI/MDIX, 802.3at PoE In LAN: 1x 10/100BASE-TX, auto-MDI/MDIX
Button	Reset/Pair button, WDS Switch
Antenna	Built-in 14dBi directional antenna with dual polarization
Data Rate	IEEE 802.11b: 1, 2, 5.5, 11Mbps IEEE 802.11g: up to 54Mbps IEEE 802.11n (20MHz): up to 150Mbps IEEE 802.11n (40MHz): up to 300Mbps
Media Access Control	CSMA/CA
Modulation	802.11g/n: OFDM (BPSK/ QPSK/ 16QAM/ 64QAM) 802.11b: DSSS (DBPSK/ DQPSK/ CCK)
Frequency Band	FCC: 2.412~2.462GHz ETSI: 2.412~2.472GHz
Operating Channels	FCC: 1~11 Channels ETSI: 1~13 Channels
Max. Transmit Power (dBm)	FCC: up to 29 ± 1dBm ETSI: < 20dBm (EIRP)

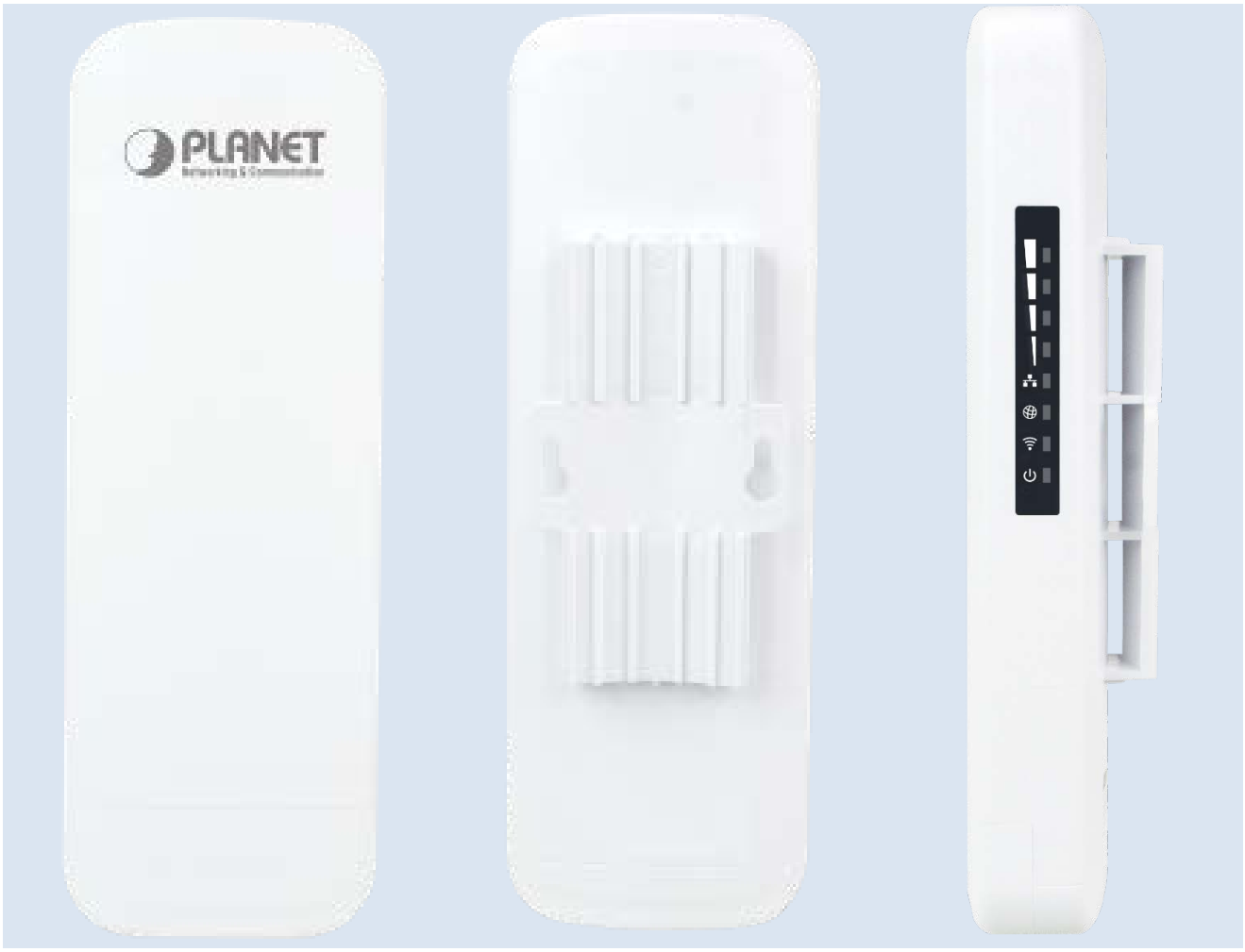
Receiver Sensitivity (dBm)	**Network Mode**	**Data Rate**	**Receive Sensitivity (dBm)**
	802.11b	1Mbps	-95
		11Mbps	-90
	802.11g	6Mbps	-90
		54Mbps	-72
	802.11n HT20	MCS0/MCS8	-90
		MCS7/MCS15	-72/-68
	802.11n HT40	MCS0/MCS8	-90
		MCS7/MCS15	-72/-68
Environment & Certification			
Operating Temperature	-20 ~ 70 degrees C		
Operating Humidity	5 ~ 90% (non-condensing)		
IP Level	IP55		
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		
Encryption Type	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 (Up to 3 peers by using “One-click WDS”)		
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	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
Central Management	Applicable controllers: WAPC-500, WAPC-1000 and Smart AP Control(SAPC)

3.3 PHYSICAL SPECIFICATIONS

Physical Specifications	
Dimensions (W x D x H)	87 x 38 x 260mm
Weight	405g

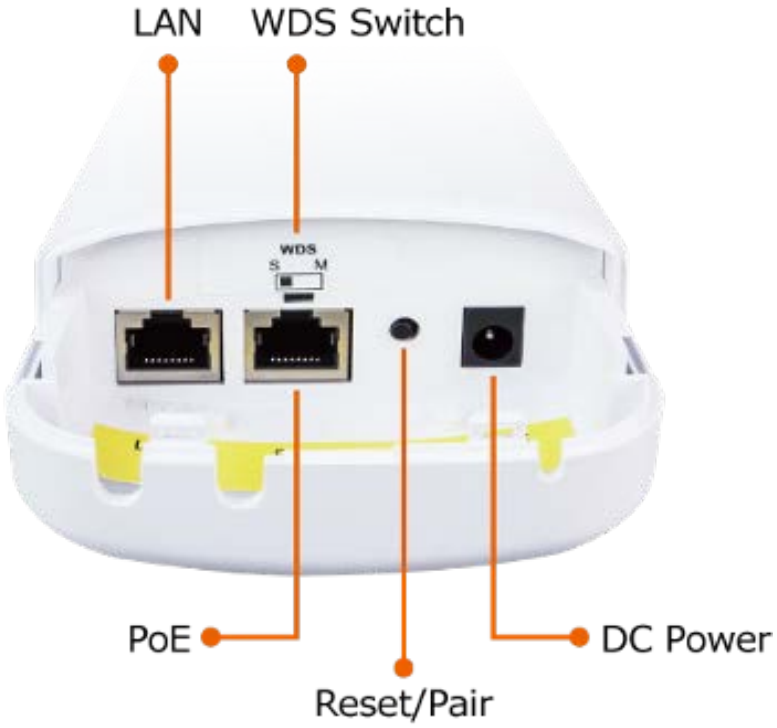
Front Side | Rear Side | RightSide



LED Definition

LED	State	Meaning
Power	On	The device is powered on
	Off	The device is powered off
WAN Port	On	Port linked
	Blinking	Data is transmitting or receiving data
	Off	No link
LAN Port	On	Port linked
	Blinking	Data is transmitting or receiving data
	Off	No link
WLAN	On	The wireless radio is on
	Blinking	Data is transmitting or receiving over wireless
	Off	The wireless radio is off

Port and button



Hardware Interface Definition

Object	Description
PoE LAN Port	10/100Mbps RJ45 port, auto MDI/MDI-X
LAN Port	10/100Mbps RJ45 port, auto MDI/MDI-X
WDS Switch	Position “S” to “M” on the master AP. Stay in “S” on the slave AP.
Reset/Pair Button	Press and hold the **Reset** button on the device for **over 15 seconds** to return to the factory default setting.
	Press the **Pair** button **within 2 minutes** on both sides to establish WDS PtP connection.

3.4 ENVIRONMENTAL SPECIFICATIONS

Environmental Specifications	
Temperature	Operating: -20 ~ 70 degrees C Storage: -40 ~ 75 degrees C
Humidity	Operating: 10 ~ 90% (non-condensing) Storage: 5 ~ 90% (non-condensing)

3.5 BASIC PACKAGING

- WBS-202N
- Quick Installation Guide x 1
- Mounting Strap x 1
- Ethernet Cable x 1

APPENDIX: Default Settings

System	
Device Name	WBS-202N
Firmware Version	1.0
Connection Type (LAN IP)	Static IP
IP Address	192.168.1.253
Subnet Mask	255.255.255.0
Wireless Settings	
Operation Mode	**Super WDS**
Mode	802.11N/G
Bandwidth	20MHz
SSID	PLANET_2.4G
Channel	2.4G: 6 (ETSI/ FCC)
Wireless Advanced Settings	
RF Output Power	100%
Packet Threshold (235-2346)	2346
Beacon interval (100-1024)ms	100
Max User (0-64)	64
Coverage Threshold (-95~-65dBm)	-95