

Product Specifications

5GHz 802.11n 300Mbps Outdoor Wireless CPE

WBS-502N

Version 1.0

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Change History:

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

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

1. PRODUCT DESCRIPTION



Flexible and Reliable Outdoor Characteristics

With the standard **IEEE 802.3at** Power over Ethernet (PoE) design, the WBS-502N can be easily installed in the areas where power outlets are not available. The WBS-502N 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-502N can perform normally under rigorous weather conditions, meaning it can be installed in any harsh, outdoor environments.

Designed for Various Requirements

The WBS-502N is specially designed for long-distance outdoor surveillance and wireless backhaul solutions that are capable of establishing stable bridge connection through the embedded 15dBi unidirectional antenna. To provide maximum performance, the WBS-502N can implement up to 8 operation modes where a multitude of applications in communities, warehouses, campuses, harbors, etc. can be made.

3 Simple Steps to Set Up WDS

Without needing to enter the Web interface for configuration, the WBS-502N needs three simple steps to establish the WDS PtP connection without any difficulty. By just clicking the **Pair** button on the WBS-502N and within 2 minutes, you can connect two WBS-502Ns without complicated configuration.

Multiple SSIDs with VLAN Tagging

As for security, the WBS-502N 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-502N to work with managed Ethernet switches to have VLANs assigned to a different access level and authority.

Optimized Efficiency in AP Management

The brand-new GUI configuration wizard helps the system administrator easily set up the WBS-502N 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-502N is easier for the administrator to deploy and manage without on-site maintenance. Moreover, you can simply use PLANET AP controller and **SAPC (Smart AP Control)** to deliver wireless profiles to multiple APs simultaneously, thus making the central management simple.

2. PRODUCT FEATURES

- **Industrial Wireless LAN and LAN**
 - Compliant with the IEEE 802.11a/n wireless technology
 - 2T2R architecture with data rate of up to 300Mbps
 - Equipped with 10/100Mbps RJ45 port, 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 15dBi 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 Deployment 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	Atheros AR9344
RAM	64MB
Flash	8MB

3.2 FUNCTIONAL SPECIFICATIONS

Product	WBS-502N
	300Mbps 802.11n Outdoor Wireless CPE
Hardware	
Standard Support	IEEE 802.11a/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 15dBi directional antenna with dual polarization
Data Rate	IEEE 802.11a: up to 54Mbps IEEE 802.11n (20MHz): up to 150Mbps IEEE 802.11n (40MHz): up to 300Mbps
Media Access Control	CSMA/CA
Modulation	802.11a/n: OFDM (BPSK/ QPSK/ 16QAM/ 64QAM)
Frequency Band	FCC: 5.180~5.240GHz, 5.745~5.825GHz ETSI: 5.180~5.700GHz
Operating Channels	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.

Max. Transmit Power (dBm)	FCC: up to 27 ± 2dBm ETSI: < 20dBm (EIRP)		
Receiver Sensitivity (dBm)	Network Mode	Data Rate	Receive Sensitivity (dBm)
	802.11a	6Mbps	-92
		54Mbps	-75
	802.11n HT20	MCS0/MCS8	-91
		MCS7/MCS15	-72
	802.11n HT40	MCS0/MCS8	-88
MCS7/MCS15		-70	
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)	<ul style="list-style-type: none"> ■ Static IP ■ Dynamic IP ■ PPPoE 		
Wireless Modes	<ul style="list-style-type: none"> ■ 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 (30 are 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

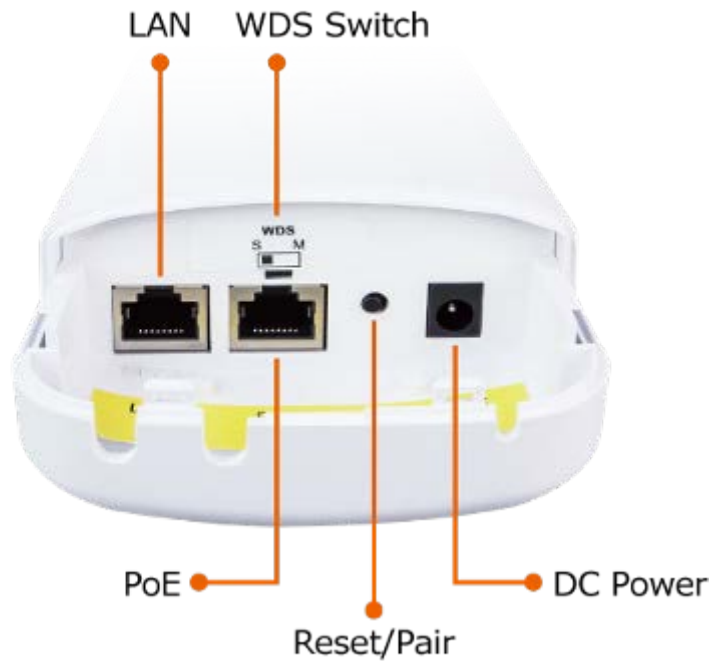
Physical Specifications	
Dimensions (W x D x H)	87 x 38 x 260mm
Weight	405g



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-502N
- Quick Installation Guide x 1
- Mounting Strap x 1
- Ethernet Cable x 1

APPENDIX: Default Settings

System	
Device Name	WBS-502N
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	802.11AN
Bandwidth	40MHz
SSID	PLANET_5G
Channel	5.8G: 36 (ETSI region)/ 149 (FCC region)
Wireless Advanced Settings	
RF Output Power	100%
Packet Threshold (235-2346)	2346
Beacon Interval (100-1024)ms	100
Max. Number of Users (0-64)	64
Coverage Threshold (-95~-65dBm)	-95