

5GHz 900Mbps 802.11ac Outdoor Wireless CPE (19dBi Antenna)

WBS-502AC

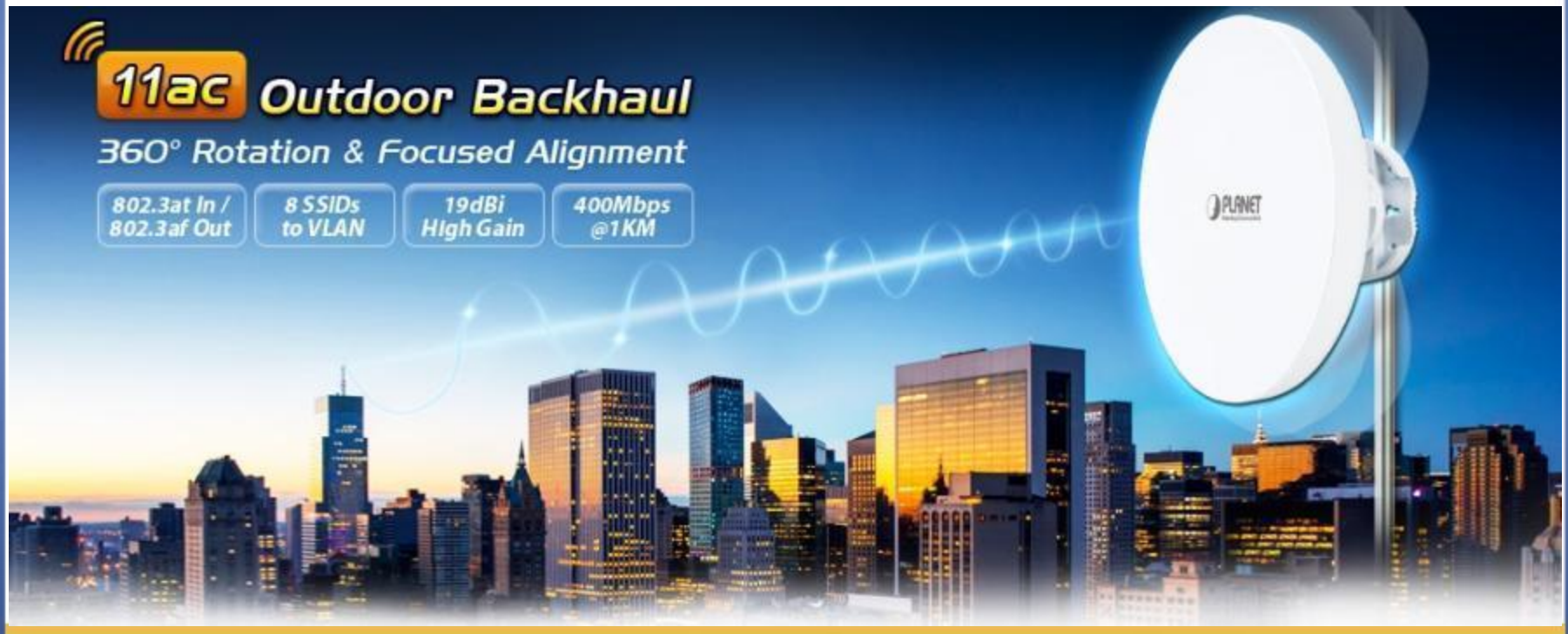


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Presentation Outlines

- ◆ **Product Positioning**
- ◆ **Product Overview**
- ◆ **Product Benefits**
- ◆ **Product Features**
- ◆ **Management Web UI**
- ◆ **Applications**
- ◆ **Product Comparison**
- ◆ **Appendix**



Product Positioning



Product Positioning – Outdoor Wireless



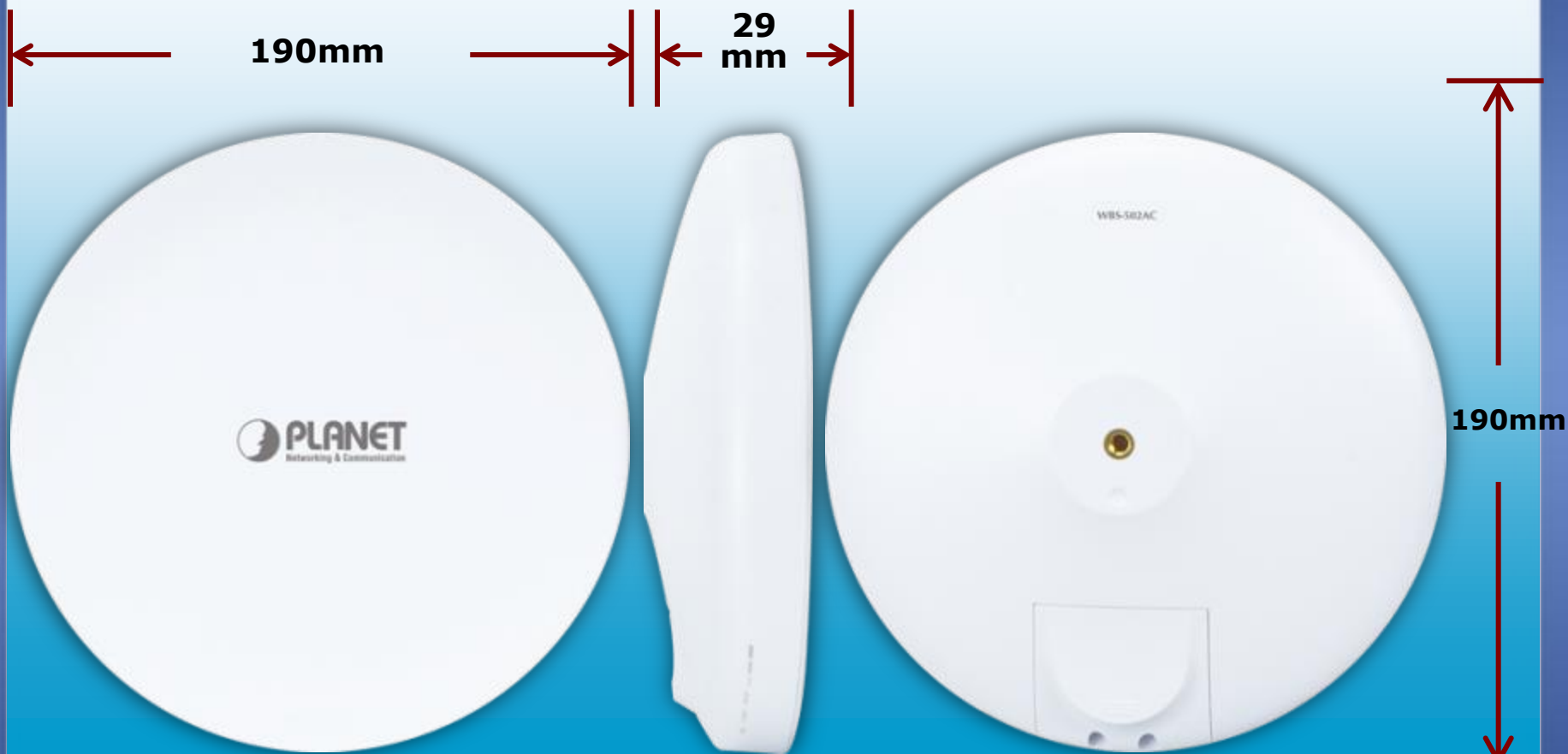
Product Overview



Product Overview

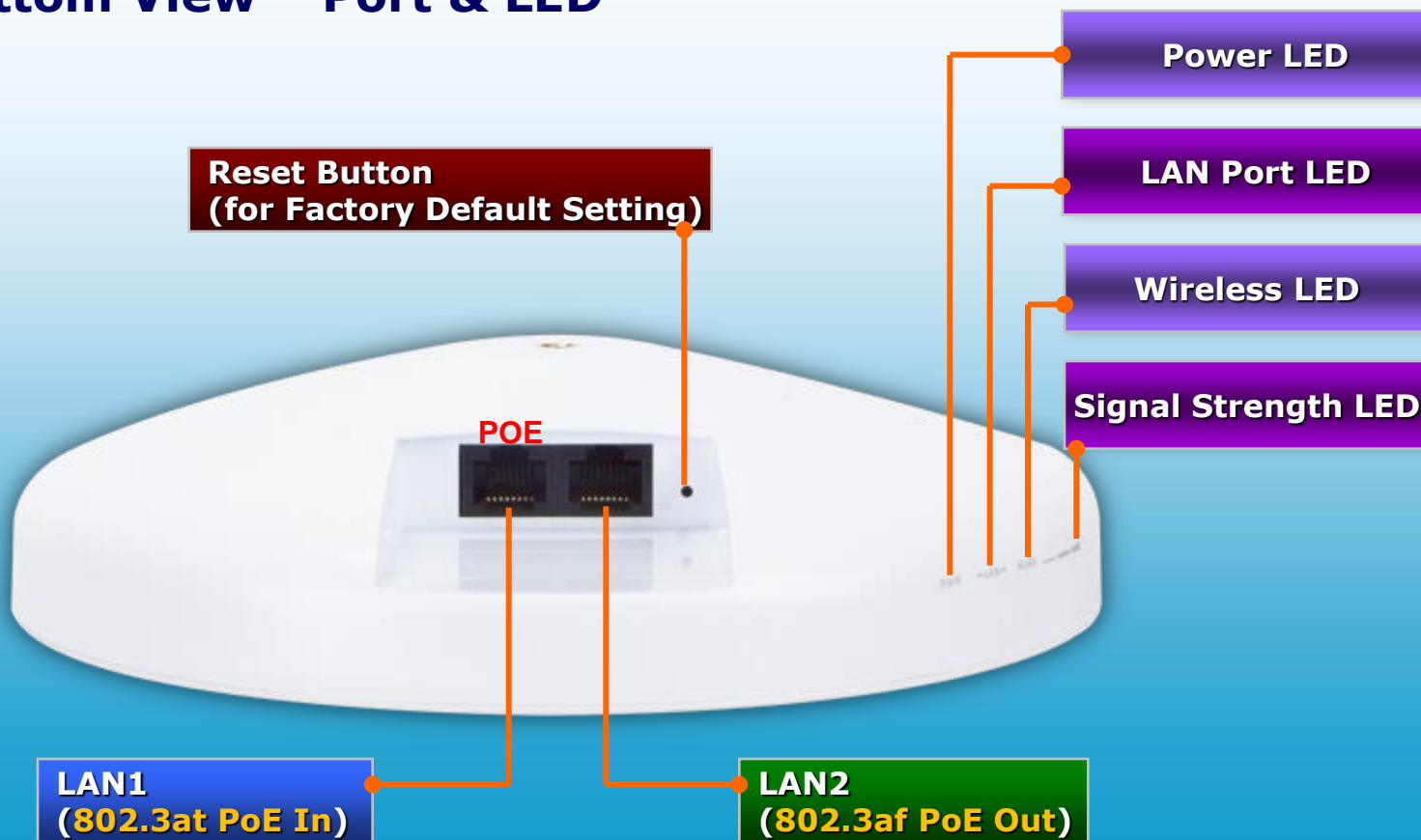
◆ H/W Design

IP55 Protection
UV Resistance



Product Overview

◆ Bottom View – Port & LED



Product Overview

◆ Rear View – Mounting Parts



Product Overview

- ◆ **Mounting Design – 3-axis design, 360-degree rotation**
- ◆ **3 steps** to aligning remote site



Step 1. Loosen the sealing nut till you can adjust antenna



Step 2. Adjust the antenna to a suitable position

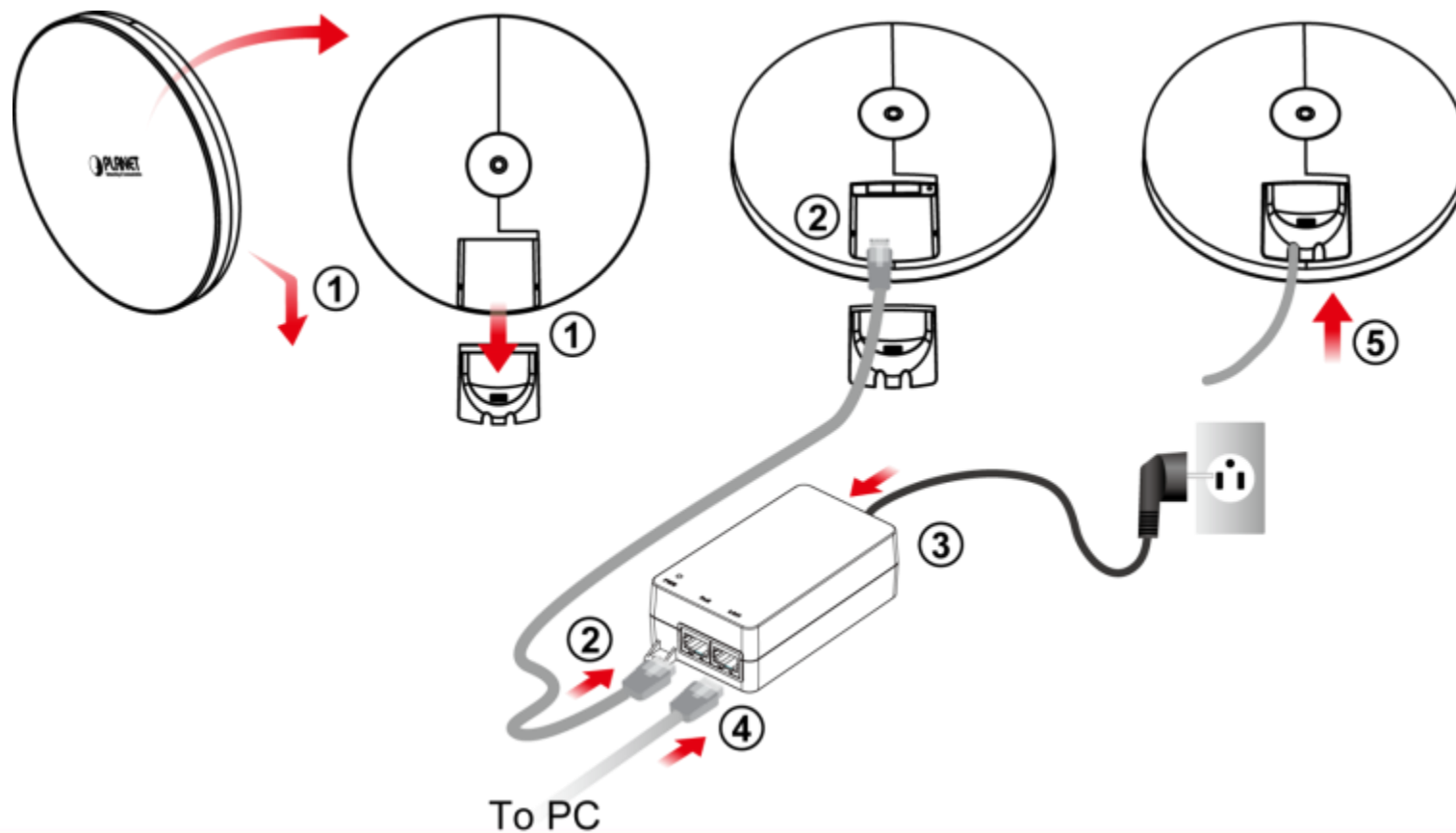


Step 3. Lock and tighten the sealing nut to fix the antenna

Product Overview

◆ Installation

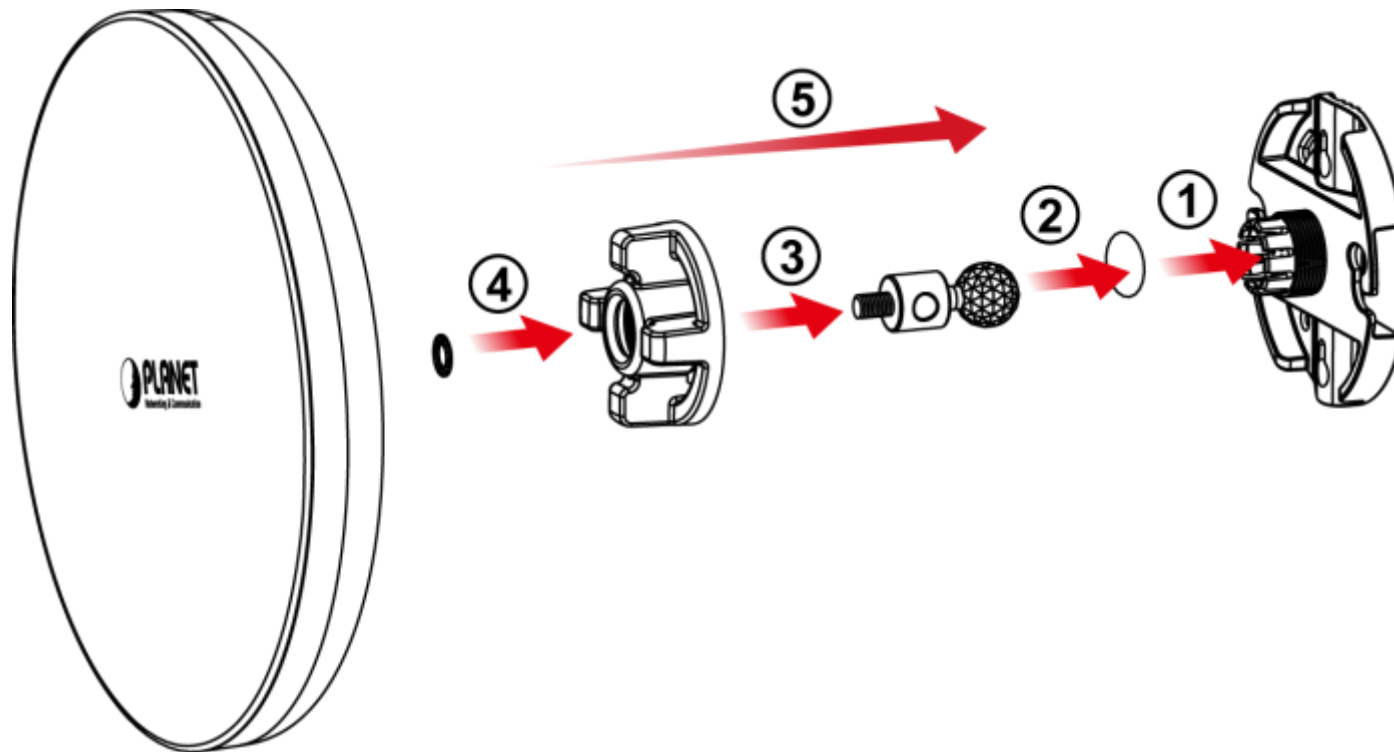
Connect the WBS-502AC to the 54V 802.3at PoE injector



Product Overview

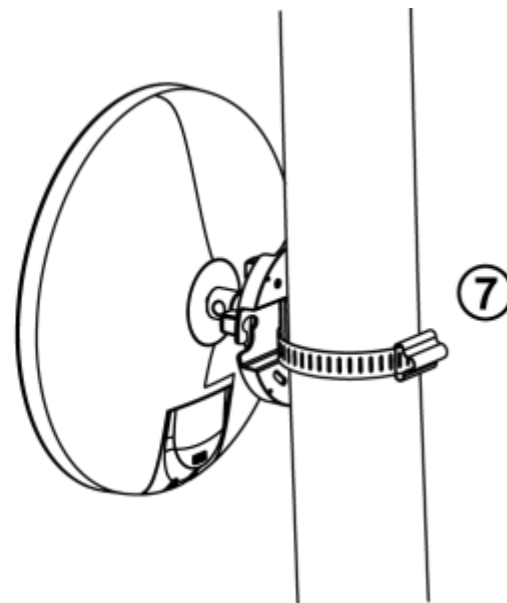
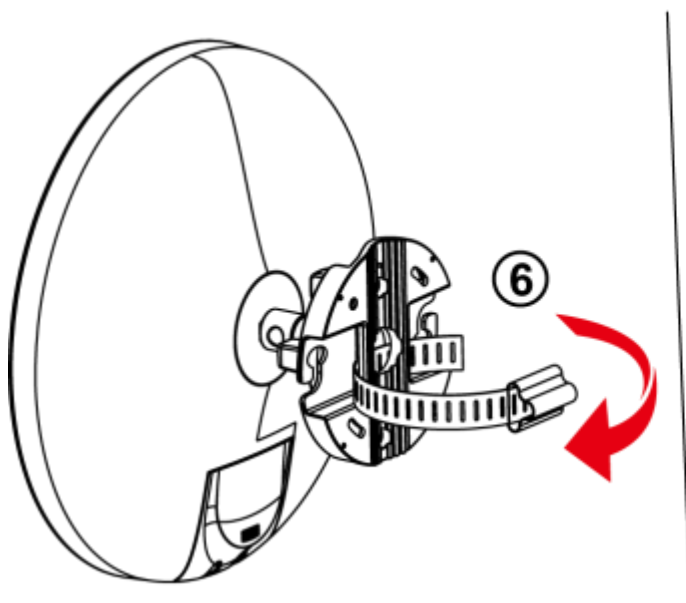
◆ Assembly of parts

Assemble all the parts before mounting



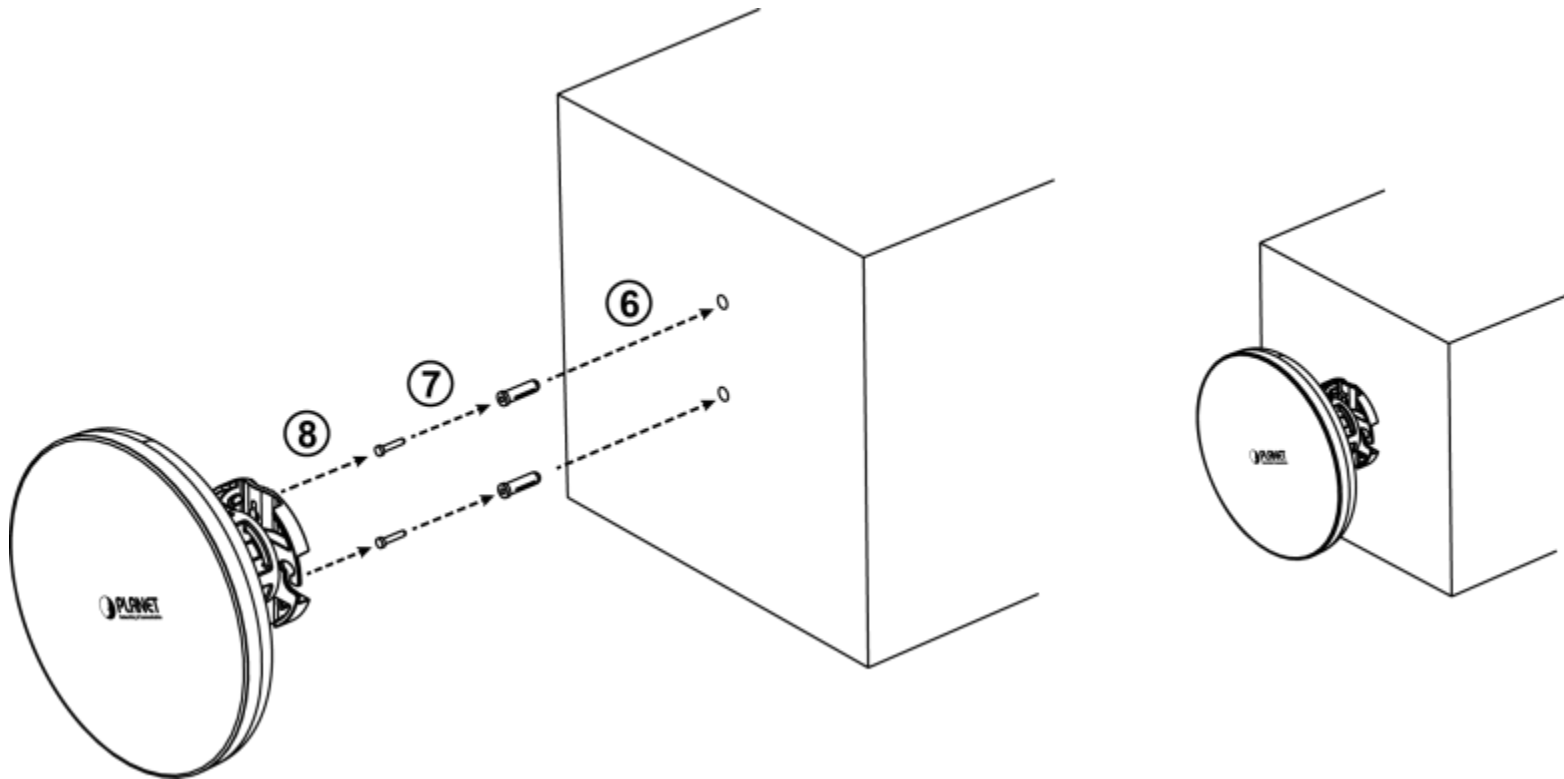
Product Overview

◆ Pole Mounting



Product Overview

◆ Wall Mounting



Product Benefits



Product Benefits

Superior Performance & Features



Reliable Long -range Solution

Product Features



Product Features

◆ Hardware Design

- ✓ **IP55-rated** outdoor UV-resistant enclosure
- ✓ Wide-ranging operating temperature of **-20~70 degrees C**
- ✓ LAN1 **802.3at PoE PD** and LAN2 **802.3af PoE PSE** Design

◆ RF interface

- ✓ IEEE **802.11ac** 2T2R **5GHz** standards compliant
- ✓ High output power up to **400mW** with multiply adjustable transmit power control
- ✓ Data rate up to **867Mbps** in 802.11ac mode
- ✓ Built-in **19dBi** dual-polarity unidirectional antenna

Product Features – Long Range

◆ PtP LoS (Line-of-Sight)



PtP up to 15km

400Mbps real throughput @1km

Reliable PtP Connection over Long Distance

Product Features

◆ Wireless/Security

✓ Operation Modes

- **AP, Client Router (WISP), WDS (PtP), WDS (PtMP)**

✓ WDS up to **8** remote APs, Multi-SSIDs up to **8**

✓ **802.1Q VLAN** pass-through over WDS and **SSID-to-VLAN** mapping

✓ **Guest Network** to provide a separate network for visitors

✓ Wireless Security

- **64-/128-/152-bit WEP, WPA, WPA2, WPA-PSK (TKIP), WPA2-PSK (AES), and 802.1x authentication**

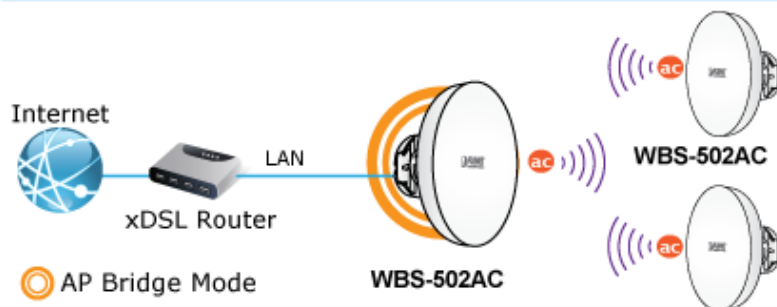
✓ Max. wireless clients (stations) up to **32** (depending on usage)

✓ Output power control (depending on regulation)

✓ Distance adjustment enables preferred deployment

Product Features - Operation Modes

AP Bridge Mode



Client Bridge Mode



WDS Bridge in PtP Mode



WDS Bridge in PtMP Mode



Client Router Mode (WISP)



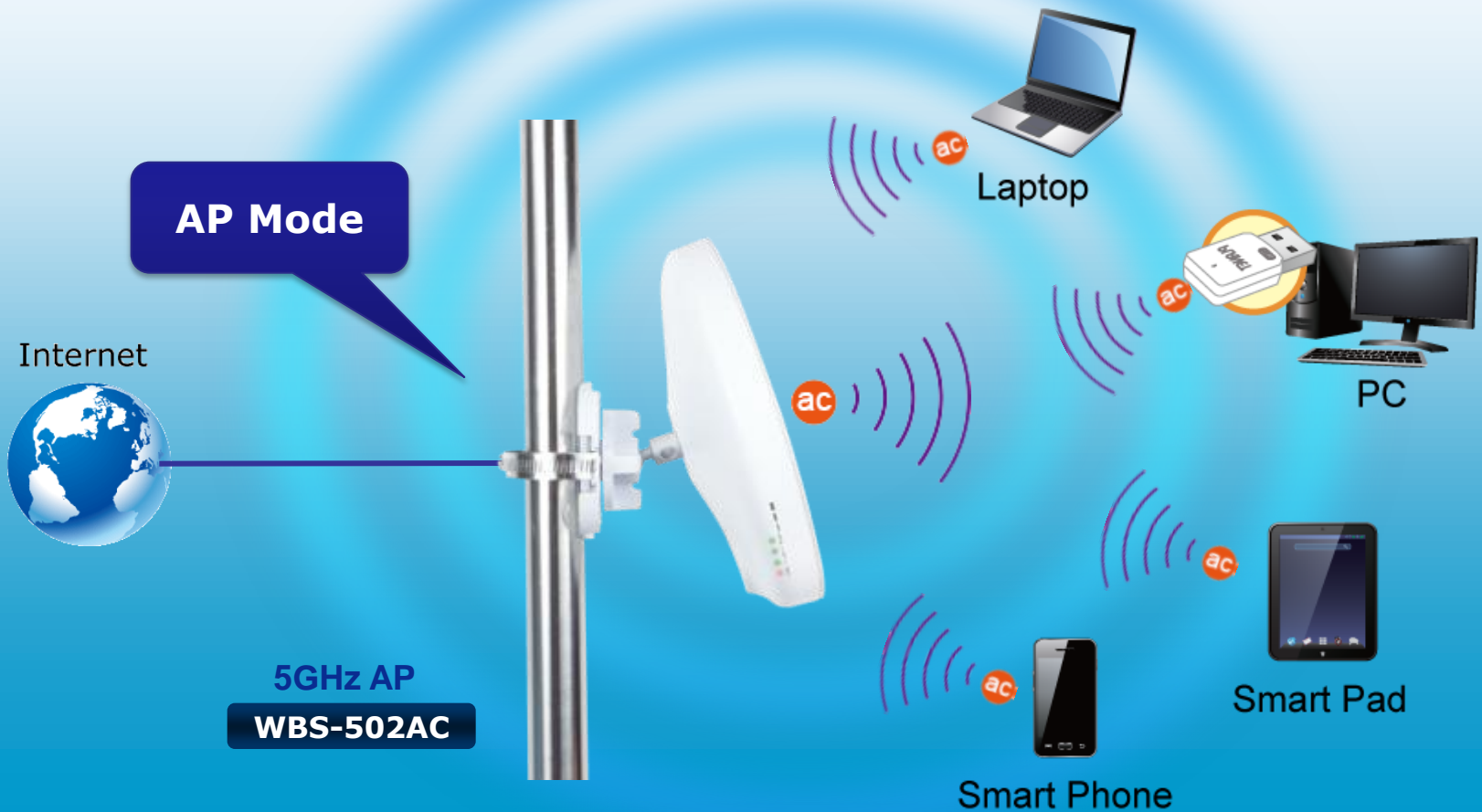
Client AP-Router Mode (WISP+AP)



Operation Modes - AP

◆ Access Point

✓ **Helps wired or wireless devices access Internet.**



Operation Modes – Client Bridge

◆ Client Bridge

- ✓ **Helps remote wired or wireless devices access Internet via AP.**



Operation Modes – WDS

◆ WDS Mode (Bridge)

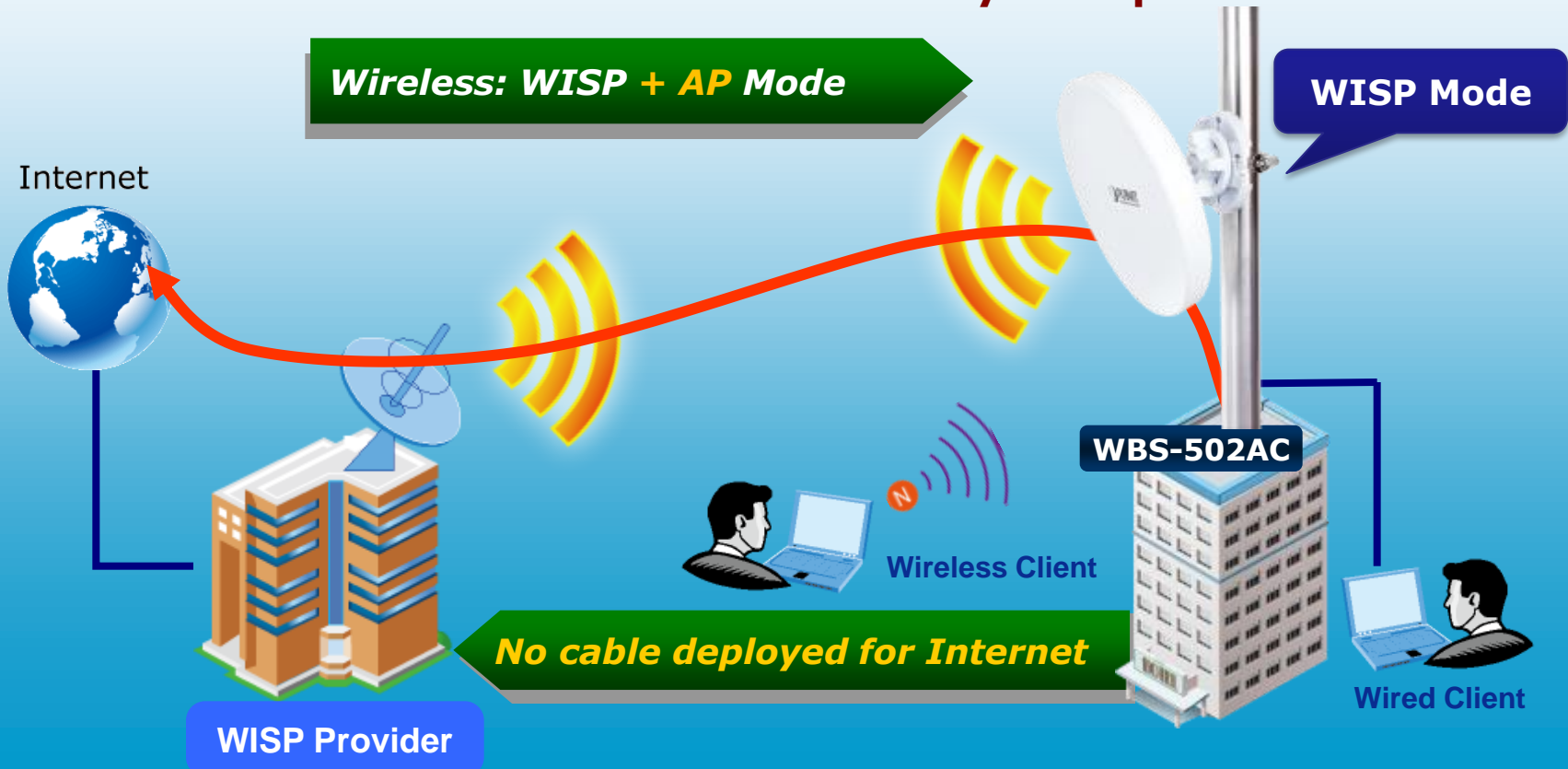
- ✓ **Two APs in two remote locations connect to each other wirelessly**



Operation Modes - WISP

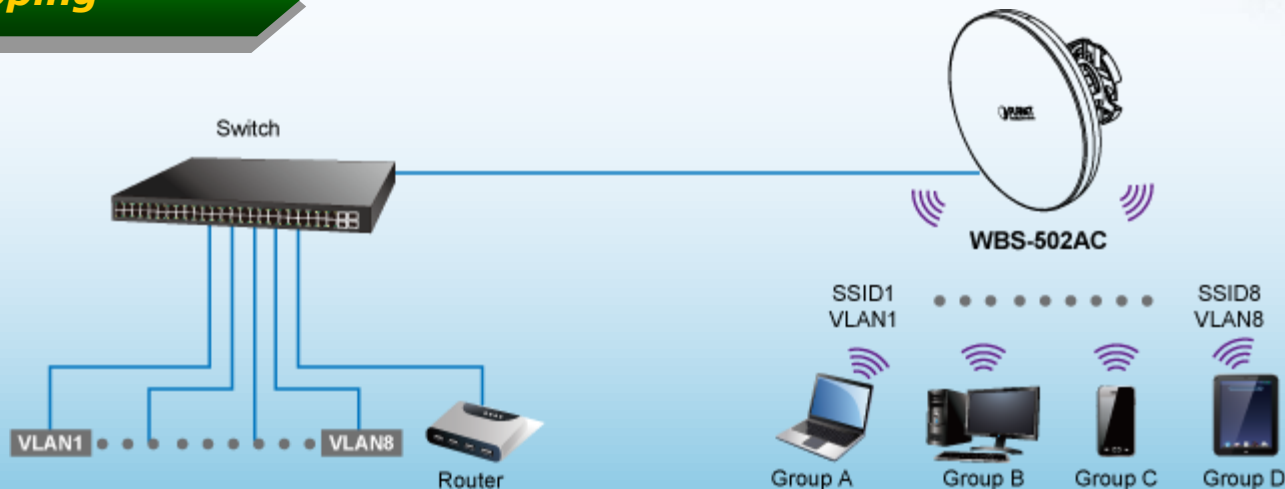
◆ WISP (Client Router)

- ✓ Acts as a WISP (client router) for subscribers to easily share the WISP connection with only a simple switch.

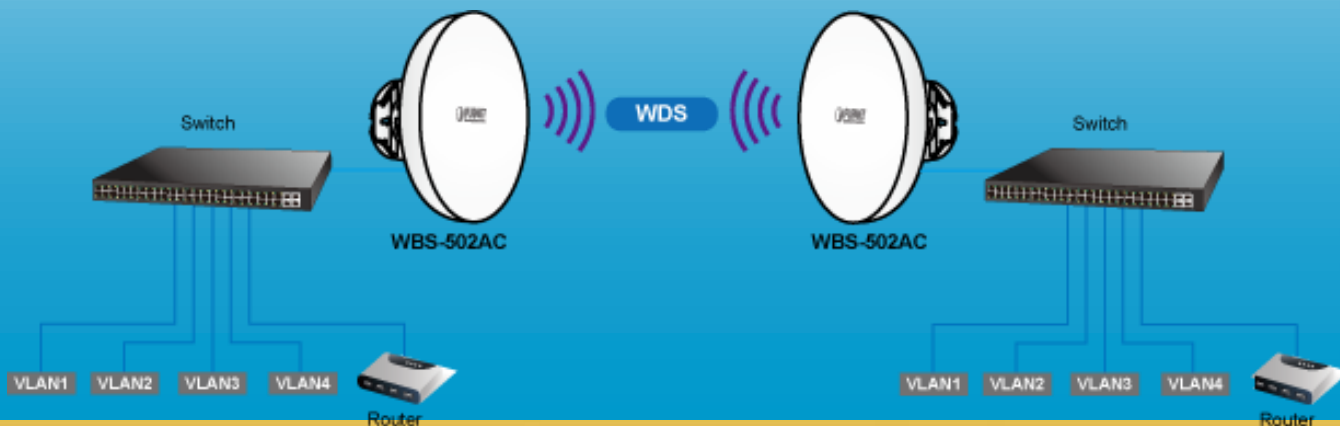


Product Features – 802.1Q VLAN

VLAN-to-SSID Mapping



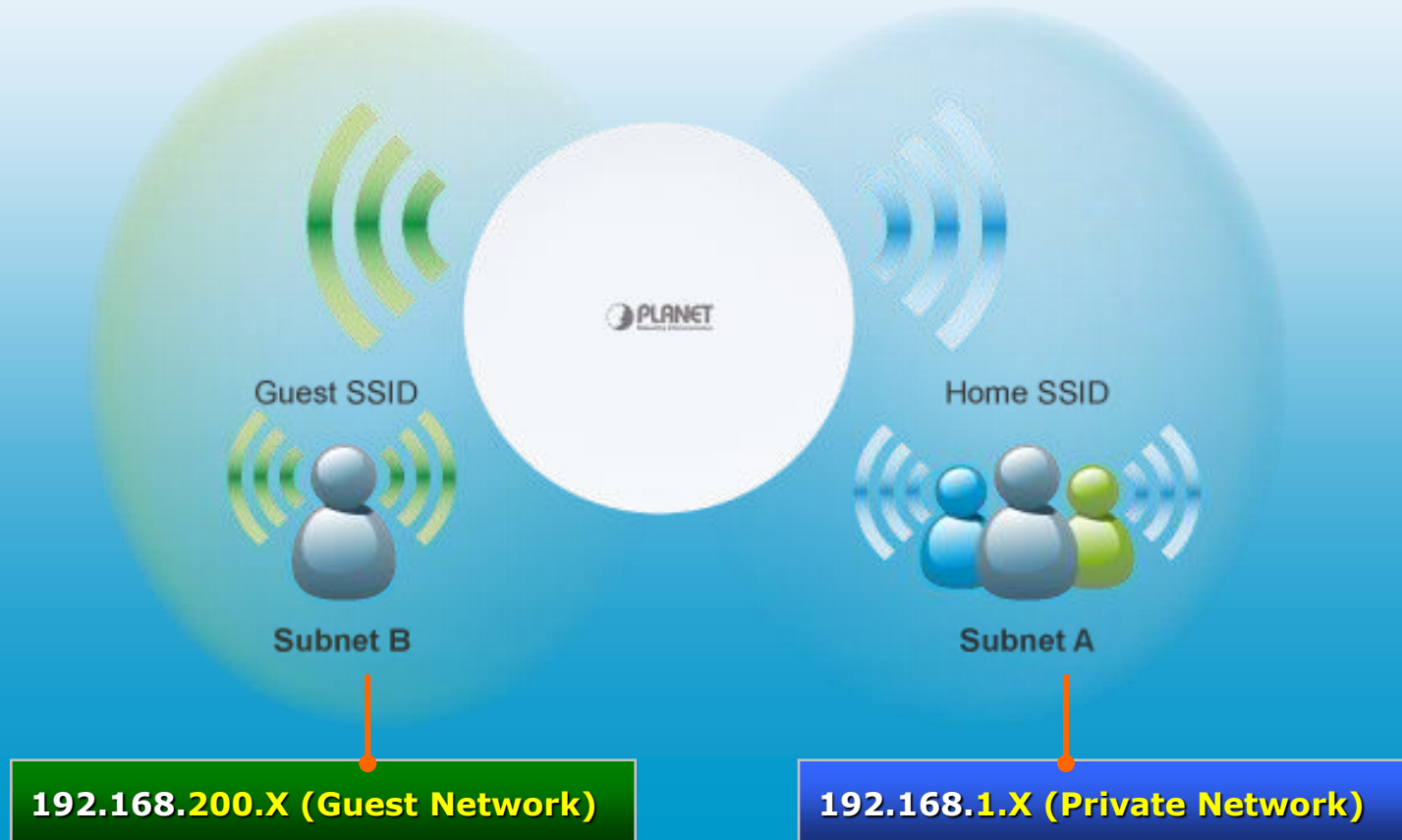
VLAN pass-through over WDS



Product Features – Guest Network

- ◆ **Guest Network preventing guests from being able to access intranet.**

Guest Network



Product Features

◆ Fixed Network Characteristics

- ✓ **WAN Connection Types for WISP:**
 - **Static IP**
 - **DHCP (Dynamic IP)**
 - **PPPoE**
 - **PPTP**
- ✓ **Supports Port Forwarding and DMZ in WISP mode**
- ✓ **Supports DHCP Server in WISP mode**
- ✓ **Supports **802.1d STP****

Product Features

◆ QoS & Management

- ✓ **WMM (Wi-Fi multimedia)** provides higher priority to multimedia transmitting over wireless
- ✓ Supports **MAC Filtering** up to **32** entries per SSID
- ✓ Wireless **Traffic Shaping** to control the bandwidth
- ✓ Diagnostic tools include **Ping, Traceroute, Speed test**
- ✓ Multilingual Web User Interface: **EN, ES, FR, DE, PT, RU, CN**
- ✓ Remote **Syslog Server** and **PLANET Smart Discovery**
- ✓ **CLI** command and **SNMP**-based management interface
- ✓ **Wi-Fi scheduler** allows wireless to enable/disable based on predefined schedule
- ✓ **Self-healing** mechanism enables AP to auto reboot per frequency

Management Web UI



Web UI – Easy Setup

Step 1

Set Operation Mode

Basic		
Wireless	5GHz	
Management	Operation Mode	Access Point <input type="checkbox"/> Green
Advanced	Wireless Mode	802.11 A

Step 2

Configure Wireless

No.	Enable	SSID	Edit	Security	Hidden SSID	Client Isolation	VLAN Isolation	VLAN ID
1	<input checked="" type="checkbox"/>	PLANET1	Edit	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	51
2	<input type="checkbox"/>	PLANET2	Edit	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	52
3	<input type="checkbox"/>	PLANET3	Edit	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	53
4	<input type="checkbox"/>	PLANET4	Edit	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	54
5	<input type="checkbox"/>	PLANET5	Edit	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	55
6	<input type="checkbox"/>	PLANET6	Edit	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	56
7	<input type="checkbox"/>	PLANET7	Edit	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	57

Changes : 10
Reset
Logout

Step 3

Go to "Changes"

Unsaved

Unsaved changes list

```
wireless.wl_index19.key=0222199518
wireless.wl_index19.encryption=psk2 aes
wireless.wl_index19.bssid=A8:F7:E0:42:C4:BB
wireless.wl_index19.ssid=731U_5G
wireless.wl_index19.PreferBSSIDEnable=1
wireless.wifi0.obeyregpower=0
wireless.wifi1.opmode=sta
wireless.wifi1.WLANExtChannel=1
wireless.wifi1.obeyregpower=0
clientcontrol.clientlimit_5g.enable=0
```

Apply

Apply saved settings to take effect

Web UI - Status

System Status


LAN Information

Connection Status

Device Information

Device Name	WBS502AC
MAC Address	
- LAN	A8:F7:E0:56:7C:87
- Wireless LAN - 5GHz	A8:F7:E0:56:7C:89
Country	Netherlands
Current Local Time	Tue May 23 09:13:42 UTC 2017
Firmware Version	1.0.0
Management VLAN ID	Untagged

LAN Information - IPv4

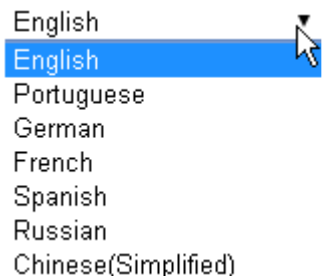
IP Address	192.168.1.253
Subnet Mask	255.255.255.0
Gateway	192.168.1.1
Primary DNS	0.0.0.0
Secondary DNS	0.0.0.0
DHCP Client	Disable
Spanning Tree Protocol (STP) 	Disable

Connection List - 5GHz

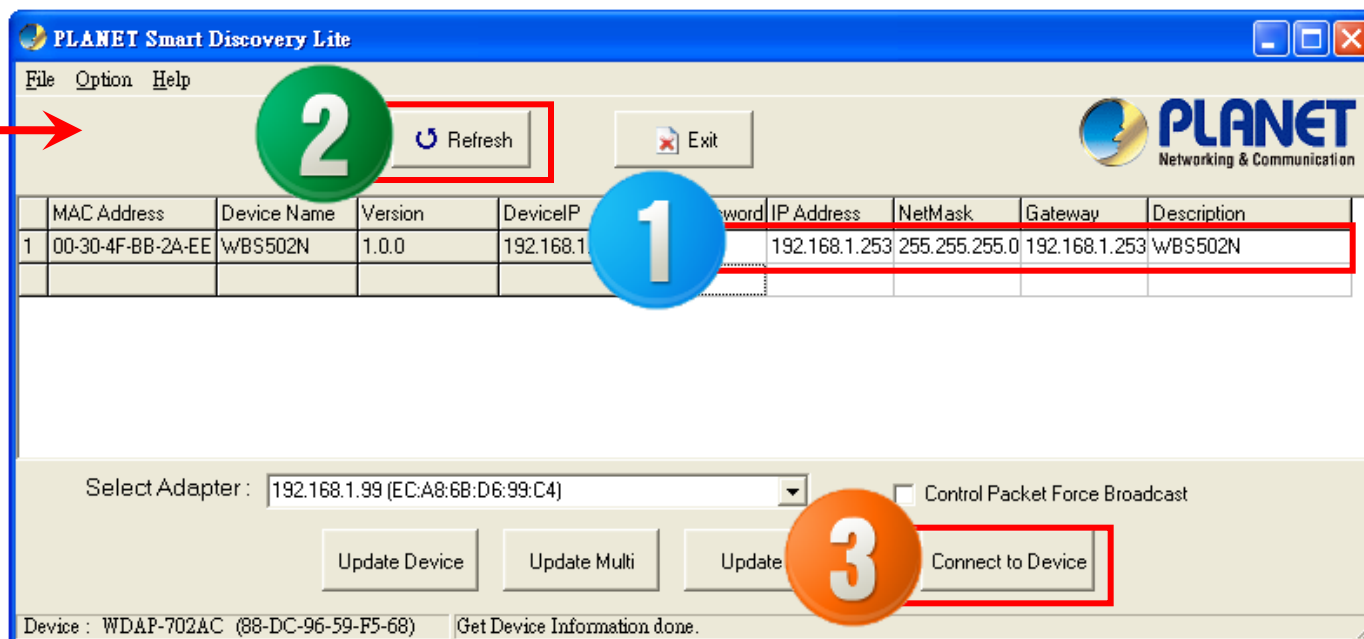
SSID	MAC Address	TX	RX	RSSI	Block
PLANET1	00:30:4F:A8:FF:FF	2Kb	9Kb	-46dBm	<input type="button" value="Kick"/>

Web UI – Friendly UI/Tool

Multilingual Web UIs



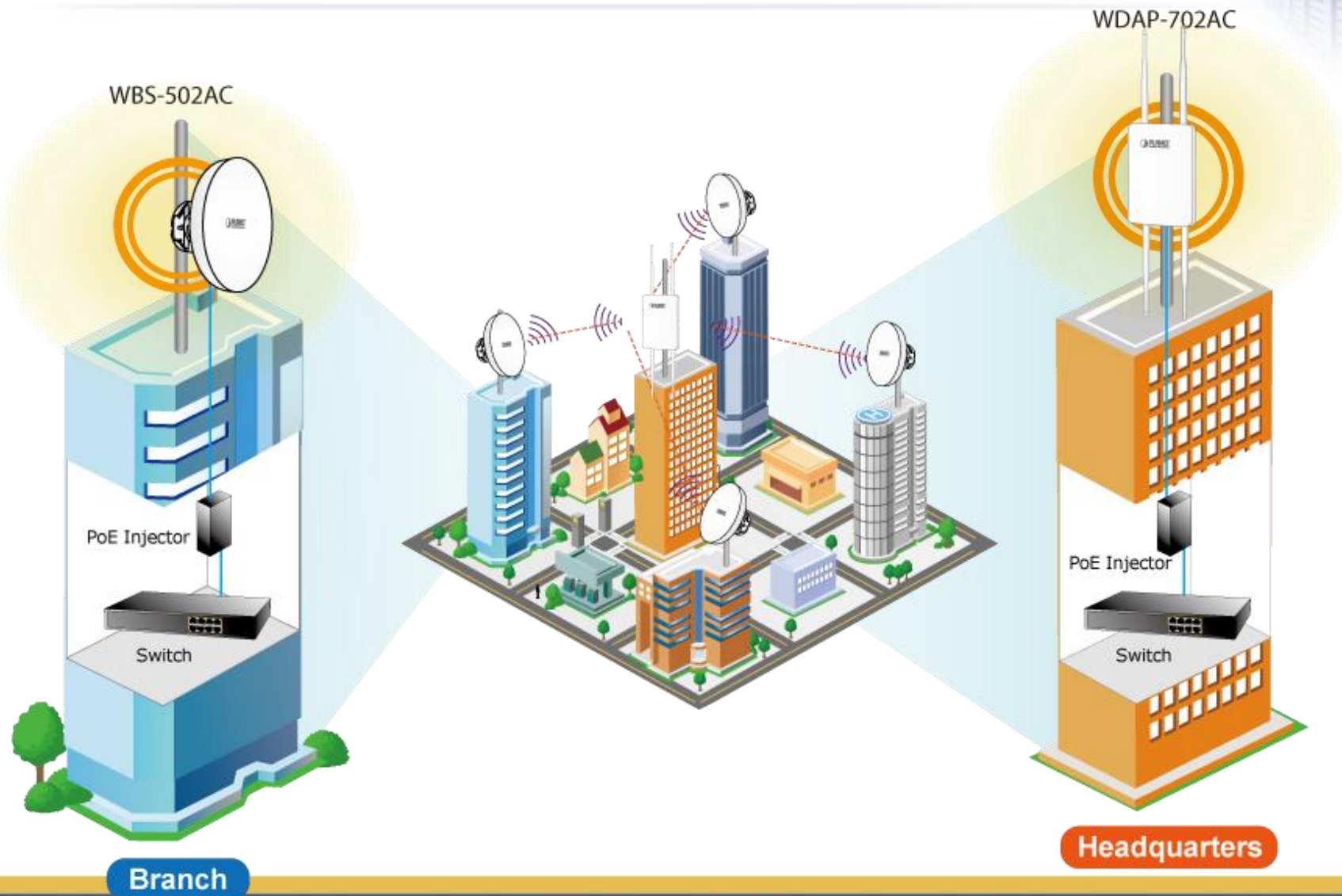
PLANET Smart Discovery Tool



Applications





Applications – **WDAP-702AC**+**WBS-502AC**



Product Comparison



Comparison – Planet **5GHz** CPE

Model	WBS-502AC	WNAP-7320/WNAP-7325
	 19dBi	 14dBi
Features		
Ethernet Port	2 x 10/100/1000Mbps	2 x 10/100Mbps
Power	802.3at PoE In/802.3af PoE Out	Passive PoE In/Passive PoE Out
Wireless Standard/Speed	802.11ac/867Mbps	802.11n/300Mbps
Wireless Antenna	19dBi dual-polarity unidirectional	14dBi dual-polarity unidirectional
Operating Temp.	-20~70°C	
IP Code	IP55-rated UV-resistant Enclosure	
Wireless Security	64-/128-/152-bit WEP, WPA/WPA2, 802.1X	64-/128-bit WEP, WPA/WPA2, 802.1X
WDS Peers	Up to 8	
Multi-SSIDs to VLAN	Up to 8	Up to 2 (WNAP-7320)
Wi-Fi Traffic Shaping	Yes	No
Operation Modes	AP, Client, WDS, WISP, WISP+AP	AP/Router, Client, WDS, WISP
SNMP	V1, V2c, V3, private MIB	V1, V2c
Management	IPv6, VPN Pass-through, CLI, Syslog Server, Guest Network, SSH, HTTPS, MAC ACL, Schedule Reboot	IPv6 (WNAP-7320), MAC ACL, Schedule Reboot

Appendix



Appendix

◆ Target Market

- ✓ **Telecom to Business**
- ✓ **Telecom to Residential**
- ✓ **Building to Building**
- ✓ **Public Area Access**
- ✓ **Hotel/Resort/Campus**
- ✓ **Small Wireless ISP**

◆ Benefits

- ✓ **Maximum bandwidth**
- ✓ **Flexible in wireless coverage**
- ✓ **Saves wiring costs**
- ✓ **Suitable for various applications**

◆ Target Solutions

- **WNAP-7205/WNAP-7206**
- **WNAP-7300**
- **WNAP-7320**
- **WNAP-7325/WNAP-7335**
- **WNAP-7350**

➤ Recommended Solutions

- **WISP**
- **Wireless Surveillance Solution**
- **Outdoor Access Point/CPE**
- **Long Distance, High Power AP**

Appendix – Related Products

◆ Related Network Equipment

WAP-500N	5GHz 300Mbps 802.11n Outdoor Wireless AP (Built-in 10dBi Antenna)
WBS-500N	5GHz 300Mbps 802.11n Outdoor Wireless CPE (2 x 5dBi detachable Antenna with RP-SMA Connector)
WNAP-7320	5GHz 300Mbps 802.11n Outdoor Wireless Access Point (Built-in 14dBi Antenna)
WNAP-7335	5GHz 300Mbps 802.11n Outdoor Wireless AP/Router (2 x RP-SMA Connector)
WNAP-7350	5GHz 300Mbps 802.11n Outdoor Wireless Access Point (2 x N-type Connector)
WDL-U601AC	433Mbps 802.11AC Dual Band Wireless USB Adapter
ELA-100	Ethernet Lightning Arrest Box



ACTIVATING IP POWER