

# 802.11n Wireless Ceiling Mount Access Point / Range Extender

**WNAP-C3220**



# Presentation Outline

- ◆ **Product Overview**
- ◆ **Product Benefits**
- ◆ **Product Features**
- ◆ **Applications**
- ◆ **Management – Web UI**
- ◆ **Comparison – Internal**
- ◆ **Comparison – External**



# Product Overview

## ◆ Environments of Ceiling Mount Access Point

Office  
Meeting Room

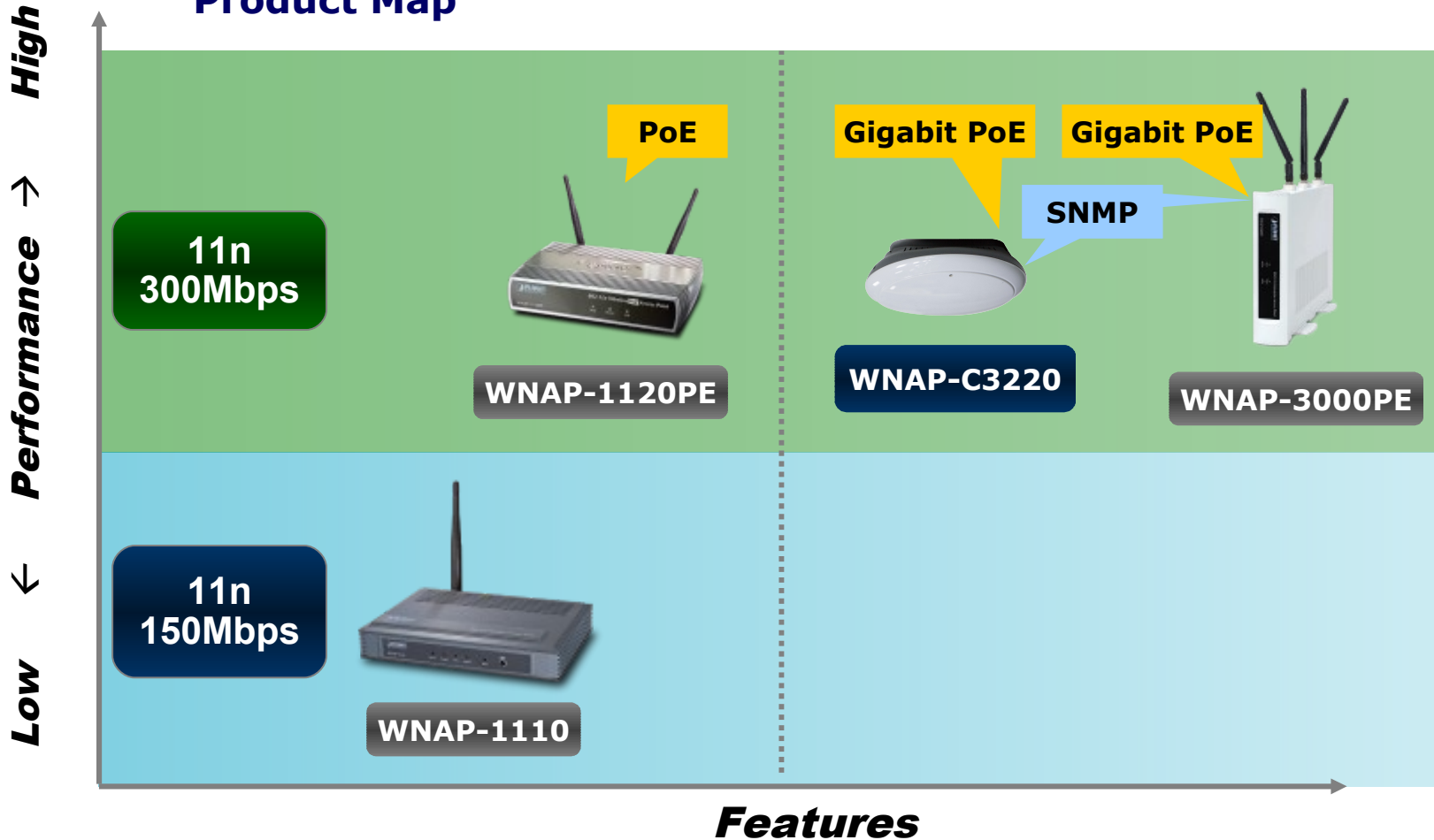
Restaurant  
School

Hotel  
Home



# Product Position

- ◆ **PLANET Indoor Wireless Access Point / Range Extender Product Map**



# Product Overview

## ◆ Front Panel

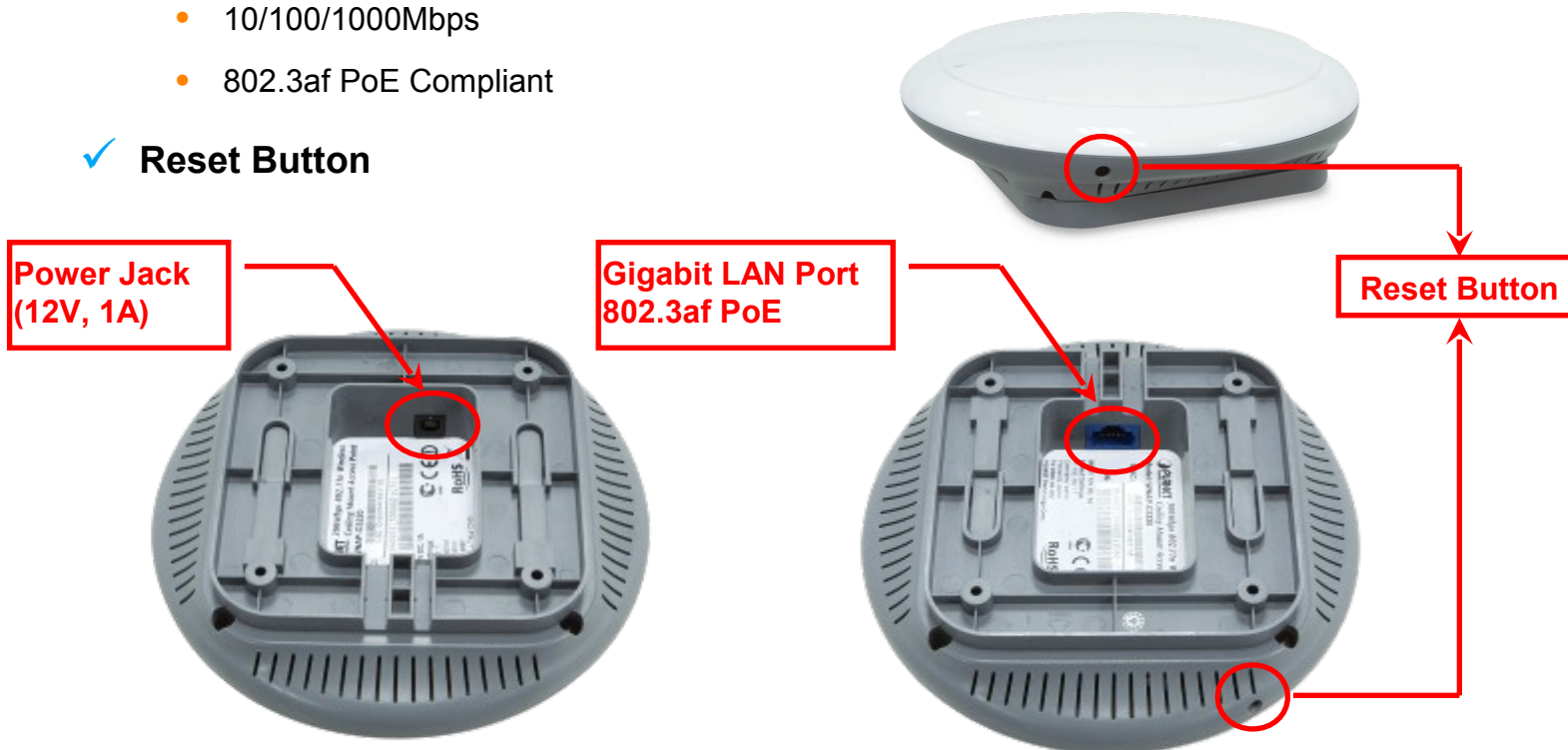
- ✓ **Dimensions: 160 x 102 x 30 mm (W x D x H)**
- ✓ **Weight: 730g**



# Product Overview

## ◆ Rear Panel

- ✓ **Power: 12VDC, 1A**
- ✓ **LAN Port:**
  - 10/100/1000Mbps
  - 802.3af PoE Compliant
- ✓ **Reset Button**

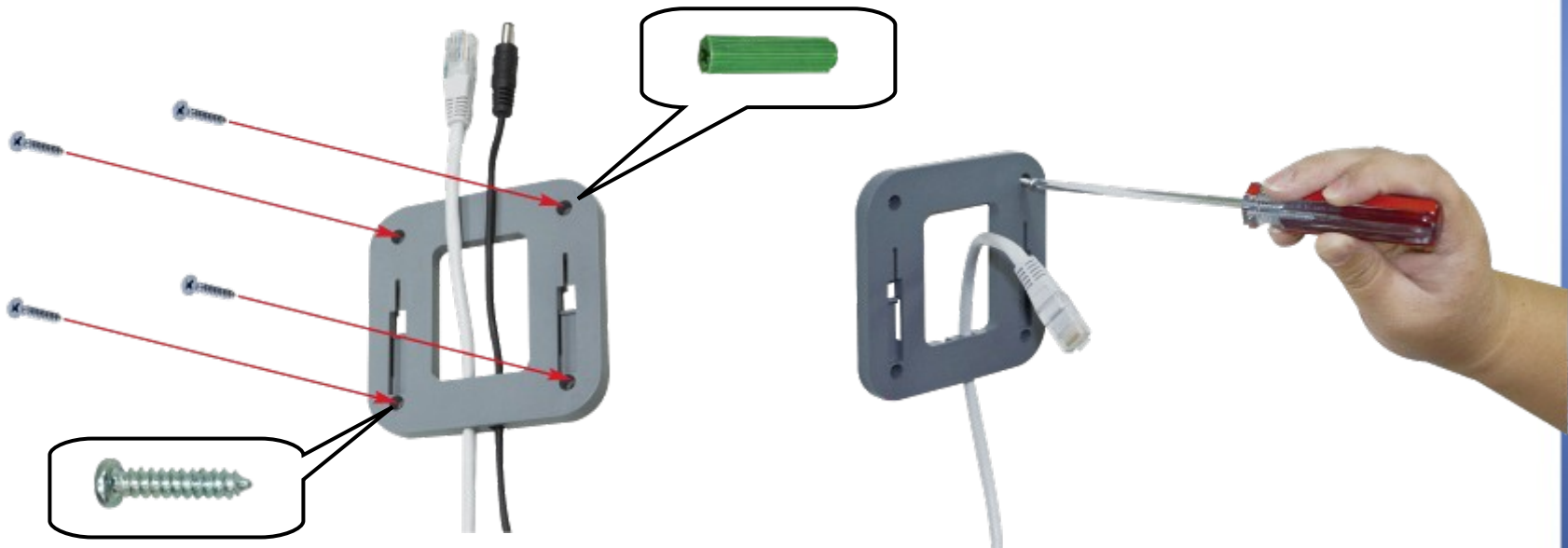




# Product Overview

## ◆ Installation - 1

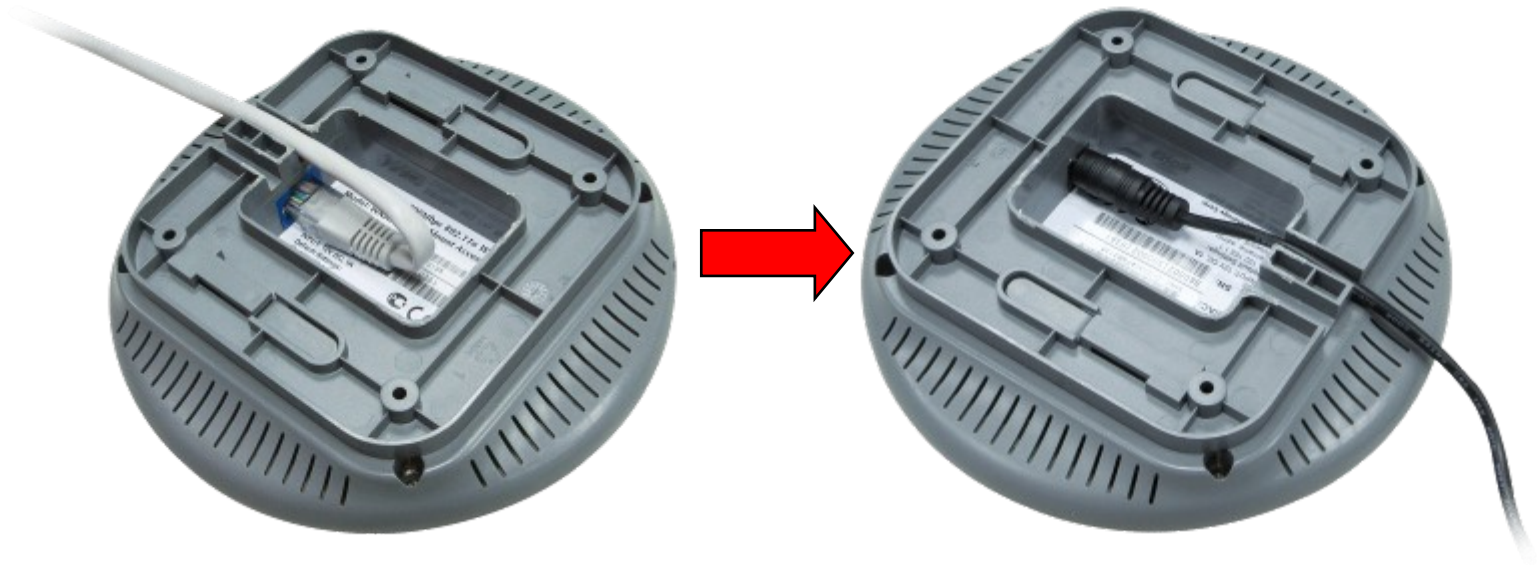
- ✓ Attach the bracket to the wall or ceiling
- ✓ Mark each point in the bracket for the screws.
- ✓ Remove the bracket to drill the points and insert the plastic wall-mounts.
- ✓ Use screws to lock the bracket by a screw driver.



# Product Overview

## ◆ Installation - 2

- ✓ **Plug the RJ-45 Ethernet cable into the WNAP-C3220.**
  - If the RJ-45 cable is connected to a **802.3af PoE switch**, then you don't have to plug the power adapter in the next step.
- ✓ **Plug the power adapter into the WNAP-C3220.**

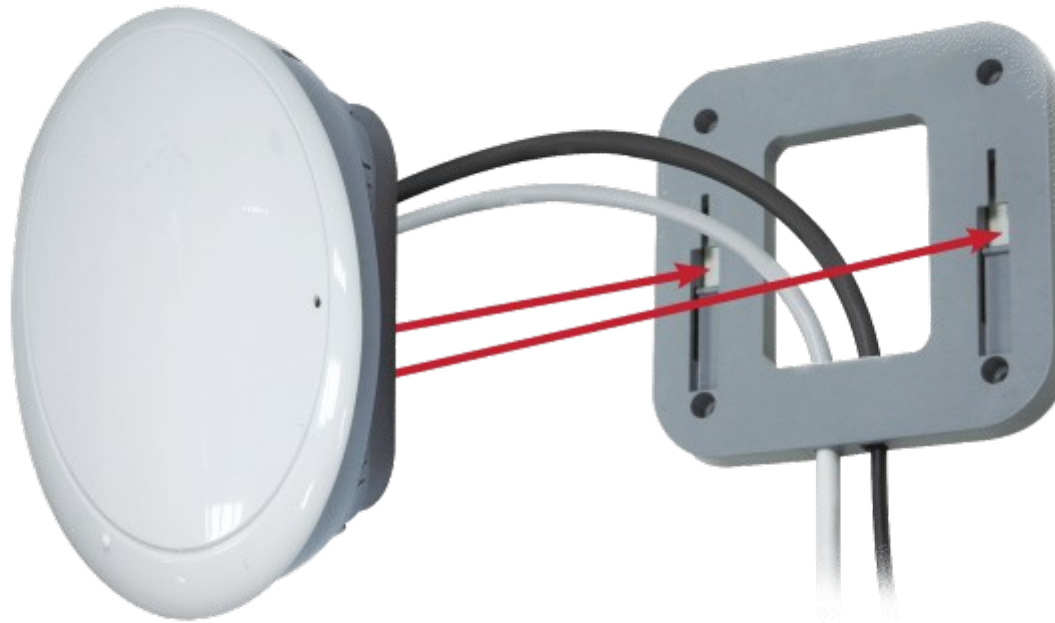




# Product Overview

## ◆ Installation - 3

- ✓ Attach the WNAP-C3220 to the mounting bracket.



# Product Overview

## ◆ Installation - 4

- ✓ Successful installation.





# Product Benefits

## ◆ **11n Highest-Speed Wireless Connectivity**

- ✓ With wireless speeds of up to **300Mbps**, the PLANET 802.11n Wireless Gigabit Ceiling Mount AP built-in with **2T2R MIMO** intelligent antennas offering high performance and superior coverage range.

## ◆ **Gigabit Ethernet Connectivity**

- ✓ Built-in **10/100/1000Mbps** Gigabit Ethernet connection ports support cable length dynamically and link down per port power saving.

## ◆ **Flexible Deployment with PoE Feature**

- ✓ Compliant with **IEEE 802.3af Power over Ethernet** standard.
- ✓ Broad compatibility with power sourcing equipment (PSE).



# Product Benefits

## ◆ Multiple Operating Modes

- ✓ Supports multiple wireless connectivity:
  - **AP (Access Point)**
  - **WDS Repeater**
  - **WDS Point-to-Point (PtP)**
  - **WDS Point-to-Multipoint (PtMP)**

## ◆ Unique & Ceiling Mountable Design

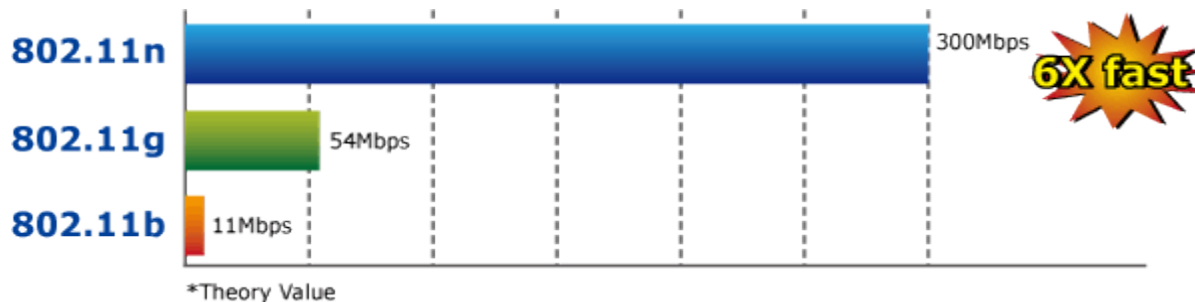
- ✓ Featuring attractive flying saucer appearance and ceiling mountable design, the WNAP-C3220 can be firmly adsorbed on the ceiling or the wall, which is easy and convenient in client-side installation.

## ◆ Easy Installation & Management

- ✓ With **user-friendly Web UI** and step by step wizard, it is easy for users to install the device, even for a user who never experience setting up a wireless network.
- ✓ Its **SNMP** feature allows the system administrator to remote monitor and control the network devices more efficiently.

# Product Features

- ◆ **Industrial Compliant Wireless LAN & LAN**
  - ✓ Compliant with **IEEE 802.11n** wireless technology
  - ✓ Data rate up to **300Mbps**
  - ✓ Backward compatible with 802.11b/g standard
  - ✓ LAN: **10/100/1000Mbps**, Auto MDI/MDI-X supported





# Product Features

## ◆ Secure Wireless Network Connection

### ✓ Advanced security

- 64/128-bit WEP
- WPA/WPA2
- WPA-PSK/WPA2-PSK(TKIP/AES encryption)
- 802.1x

### ✓ MAC Filtering up to **50** entries

## ◆ Connection capacity management

### ✓ Max. Wired Client: **Unlimited**

### ✓ Max. Wireless Client: **20** (Default 10)

### ✓ Max. WDS AP: **4**

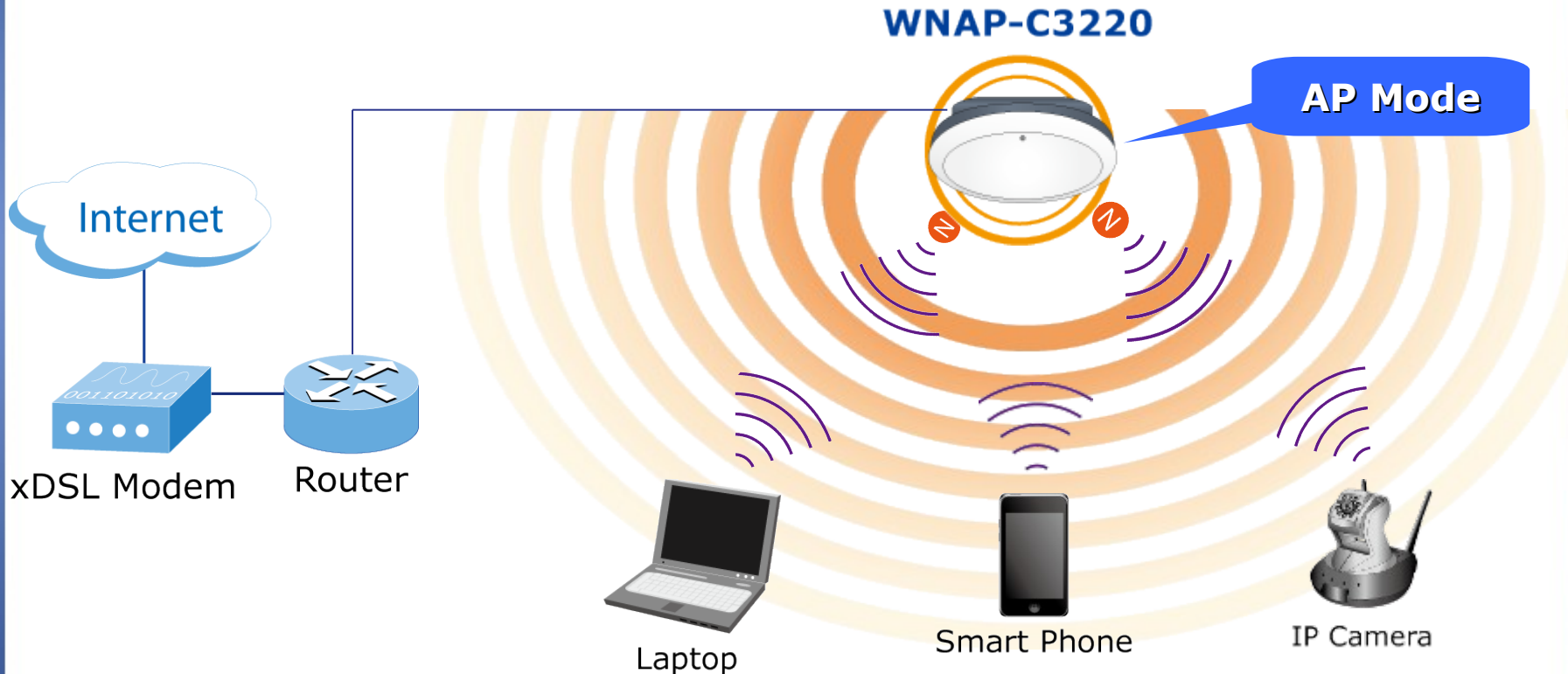
# Product Features

- ◆ **Multiple Wireless Network Technologies for Greater Access**
  - ✓ **Multiple Operation Modes:**
    - AP
    - WDS Point-to-Point (PtP)
    - WDS Point-to-Multipoint (PtMP)
    - WDS Repeater (WDS+AP)
- ◆ **2T2R MIMO Antenna solution**
  - ✓ Provides better RF coverage
  - ✓ Up to **300Mbps** high speed transmission.

# Multiple Operation Mode

## ◆ Wireless Access Point

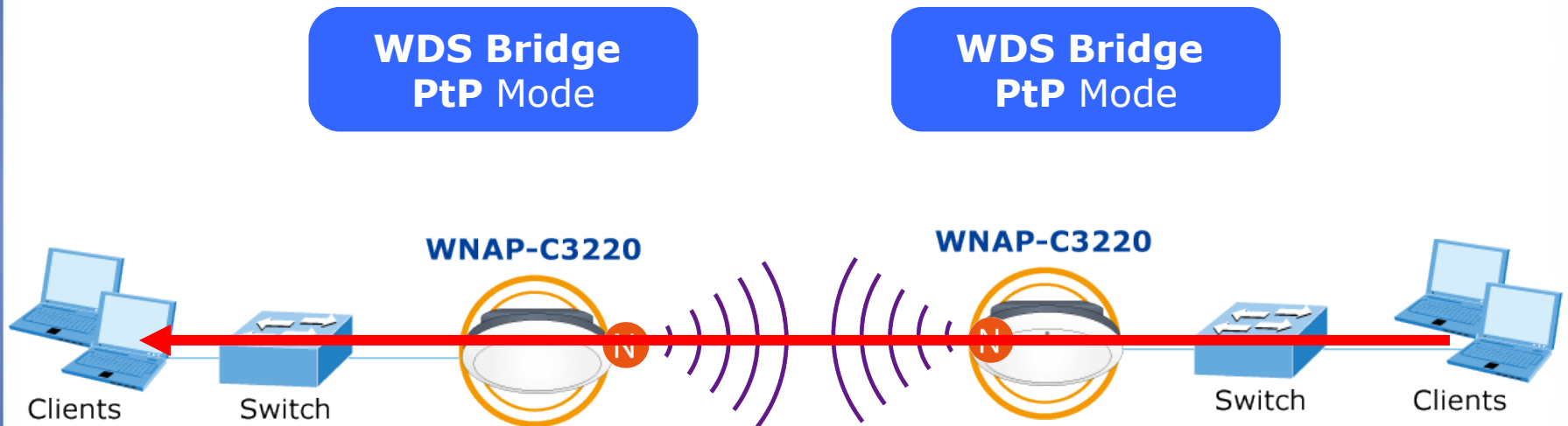
- ✓ Acts as a central hub for wired / wireless LAN and connect to Internet



# Multiple Operation Mode

## ◆ WDS Bridge – Point to Point Mode

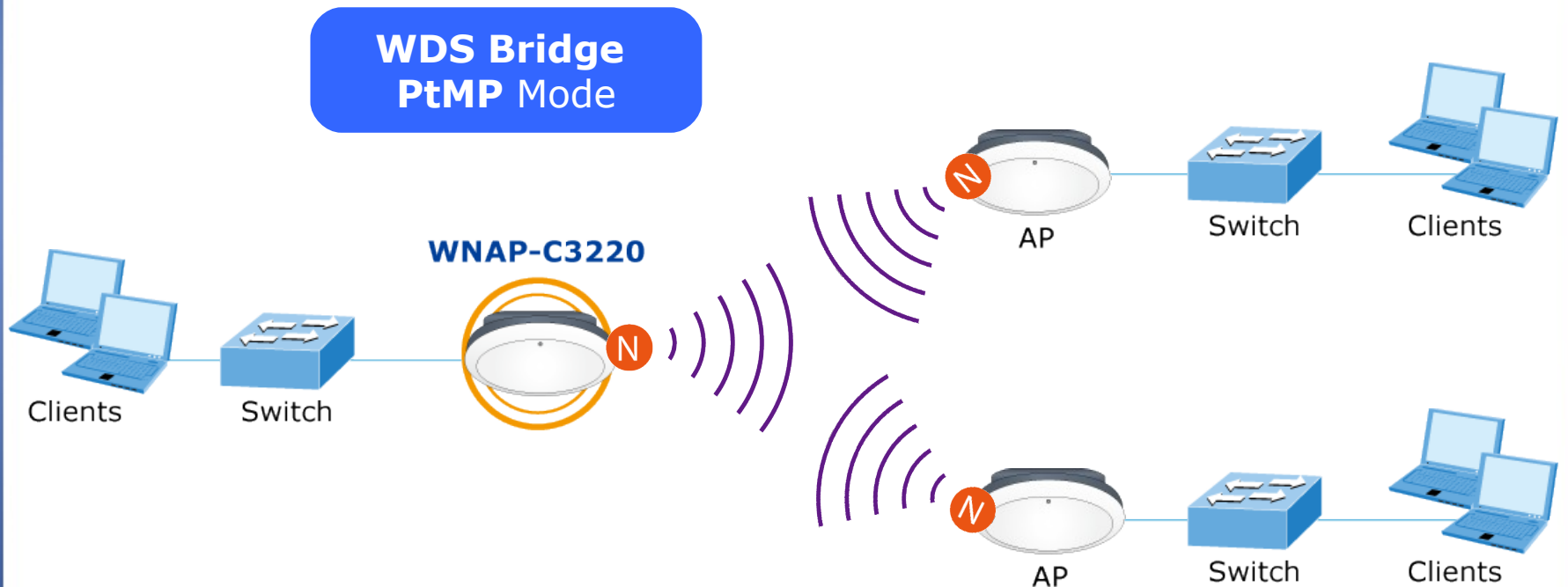
- ✓ Two APs in two remote locations connect to each other wirelessly



# Multiple Operation Mode

## ◆ WDS Bridge – Point to Multiple Point Mode

- ✓ Wirelessly connects multiple locations together allowing them to share the same network resources.

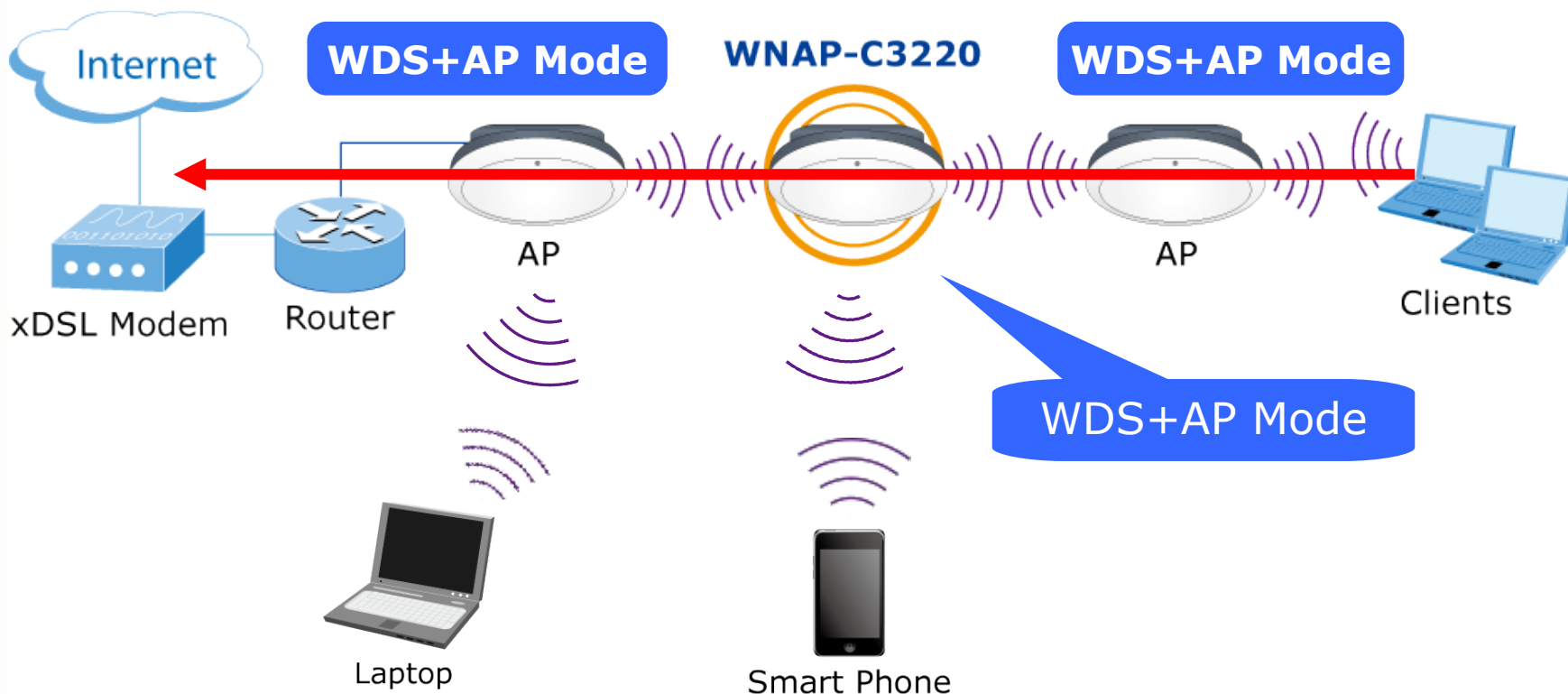




# Multiple Operation Mode

## ◆ WDS Repeater (WDS + AP) Mode

- ✓ Bridge two APs and provides access for wireless clients at the same time

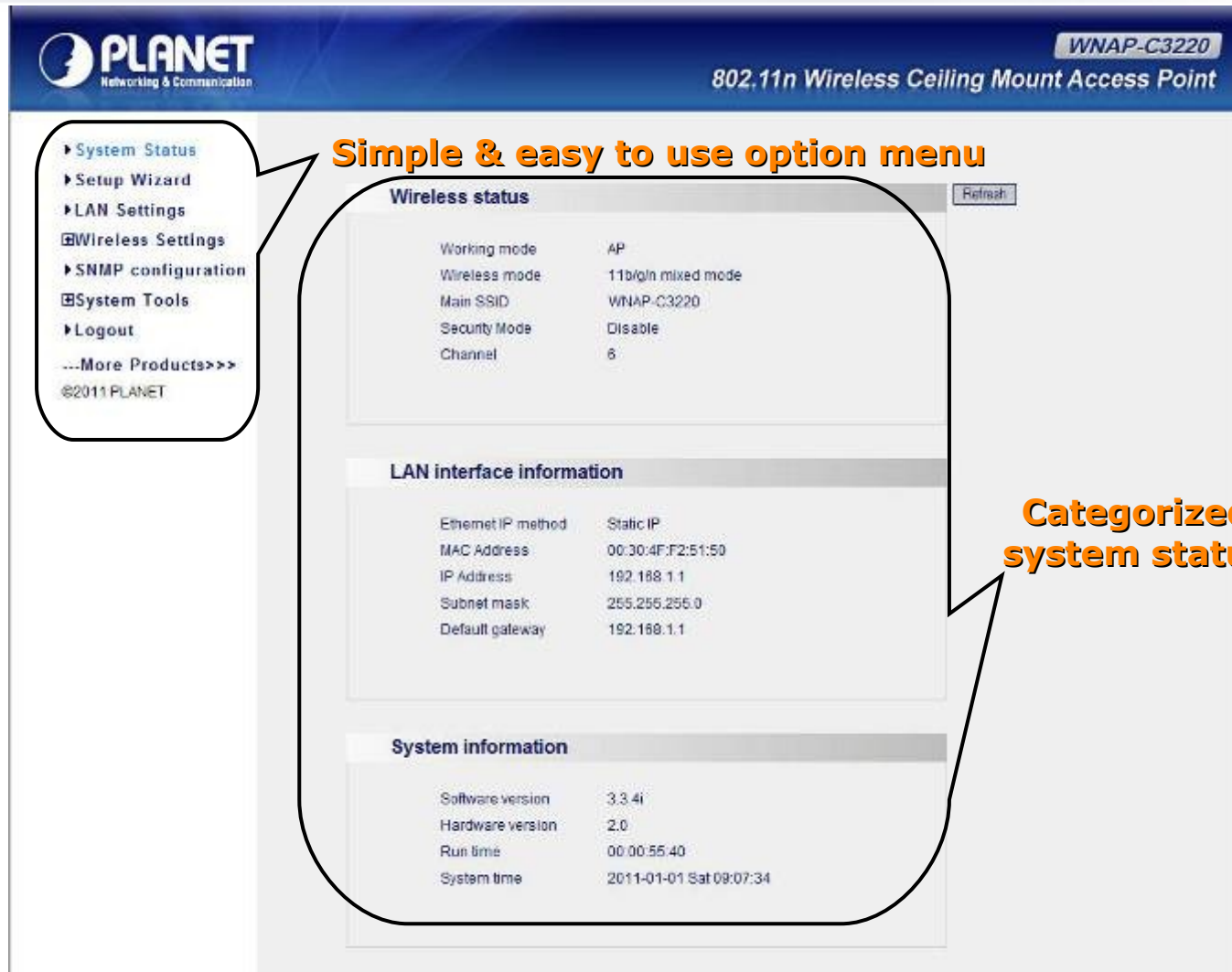


# Product Features

## ◆ Easy Installation & Management

- ✓ Step by Step configuration with Intelligent Setup Wizard
- ✓ **User-friendly Web** and **SNMP-Based** management interface
- ✓ Firmware Upgrade & Configuration Backup/Restore
- ✓ System status monitoring including Associated Client List, System Log

# Web UI - Main



**Simple & easy to use option menu**

- ▶ System Status
- ▶ Setup Wizard
- ▶ LAN Settings
- ▣ Wireless Settings
- ▶ SNMP configuration
- ▣ System Tools
- ▶ Logout
- More Products>>>
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**Categorized system status**

**Wireless status**

Working mode	AP
Wireless mode	11b/g/n mixed mode
Main SSID	WNAP-C3220
Security Mode	Disable
Channel	6

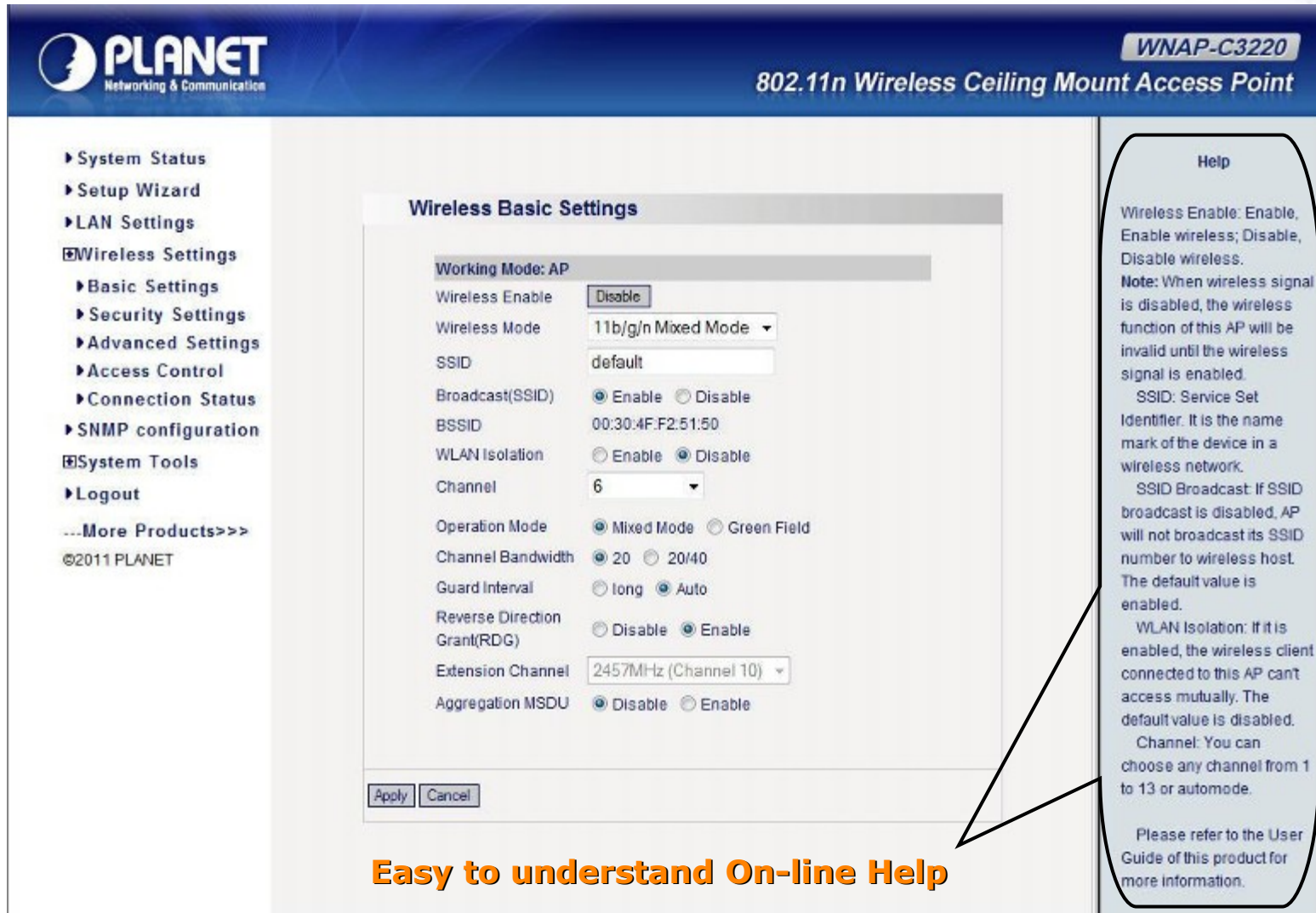
**LAN interface information**

Ethernet IP method	Static IP
MAC Address	00:30:4F:F2:51:50
IP Address	192.168.1.1
Subnet mask	255.255.255.0
Default gateway	192.168.1.1

**System information**

Software version	3.3.4i
Hardware version	2.0
Run time	00:00:55:40
System time	2011-01-01 Sat 09:07:34

# Web UI - Wireless



**PLANET** Networking & Communication

**WNAP-C3220**  
802.11n Wireless Ceiling Mount Access Point

- ▶ System Status
- ▶ Setup Wizard
- ▶ LAN Settings
- ▣ Wireless Settings
  - ▶ Basic Settings
  - ▶ Security Settings
  - ▶ Advanced Settings
  - ▶ Access Control
  - ▶ Connection Status
- ▶ SNMP configuration
- ▣ System Tools
  - ▶ Logout

...More Products>>>  
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### Wireless Basic Settings

Working Mode: AP

Wireless Enable

Wireless Mode 11b/g/n Mixed Mode ▾

SSID default

Broadcast(SSID)  Enable  Disable

BSSID 00:30:4F:F2:51:50

WLAN Isolation  Enable  Disable

Channel 6 ▾

Operation Mode  Mixed Mode  Green Field

Channel Bandwidth  20  20/40

Guard Interval  long  Auto

Reverse Direction Grant(RDG)  Disable  Enable

Extension Channel 2457MHz (Channel 10) ▾

Aggregation MSDU  Disable  Enable

### Help

Wireless Enable: Enable, Enable wireless; Disable, Disable wireless.

**Note:** When wireless signal is disabled, the wireless function of this AP will be invalid until the wireless signal is enabled.

SSID: Service Set Identifier. It is the name mark of the device in a wireless network.

SSID Broadcast: If SSID broadcast is disabled, AP will not broadcast its SSID number to wireless host. The default value is enabled.

WLAN Isolation: If it is enabled, the wireless client connected to this AP can't access mutually. The default value is disabled.

Channel: You can choose any channel from 1 to 13 or automode.

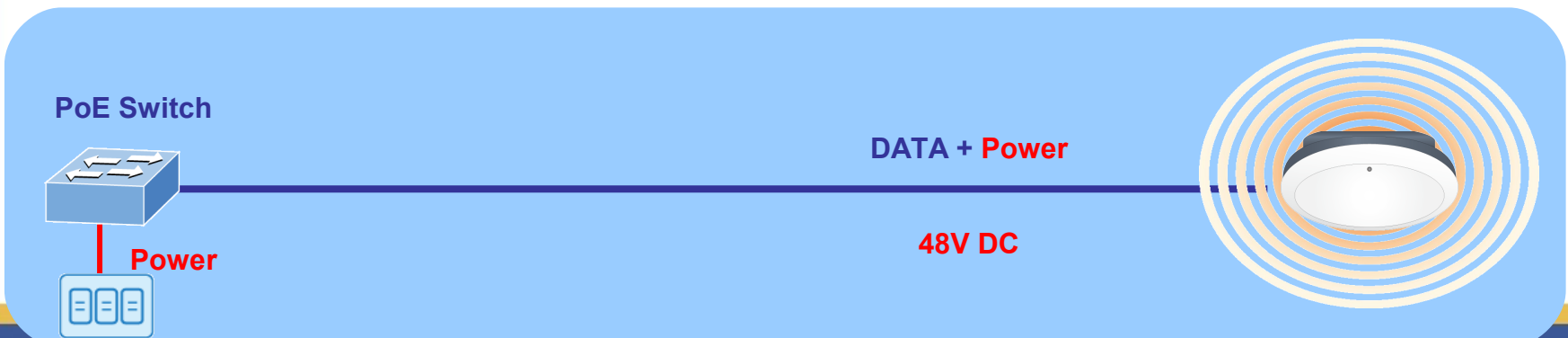
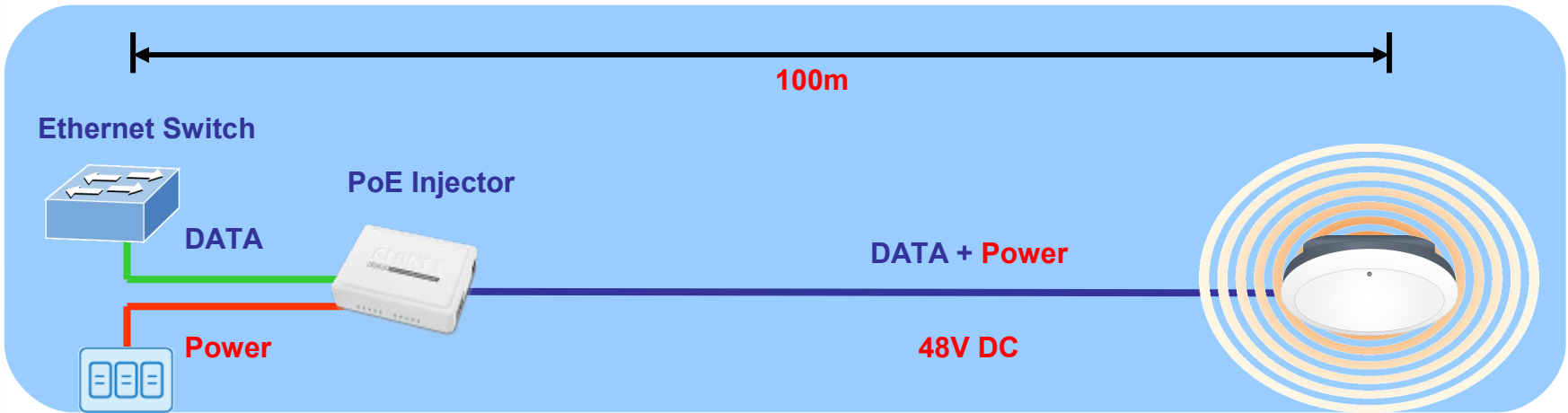
Please refer to the User Guide of this product for more information.

**Easy to understand On-line Help**

# Product Features

## ◆ Flexible Deployment with PoE Feature

- ✓ Compliant with **IEEE 802.3af Power over Ethernet** standard.
- ✓ Broad compatibility with power sourcing equipment (PSE).







# Product Features

## ◆ Multiple Mounting Options

- ✓ **Ceiling or Wall mount** flexible choice, not occupied space and can reduce the dead-spot for indoor use.
- ✓ **Streamlined body without protruding antennas** gives effects of embellishment on the surroundings.

# Product Features

## ◆ Ceiling Mount to any place

### ✓ Meeting Room



# Product Features

## ◆ Ceiling Mount to any place

### ✓ Hotel Room



# Product Features

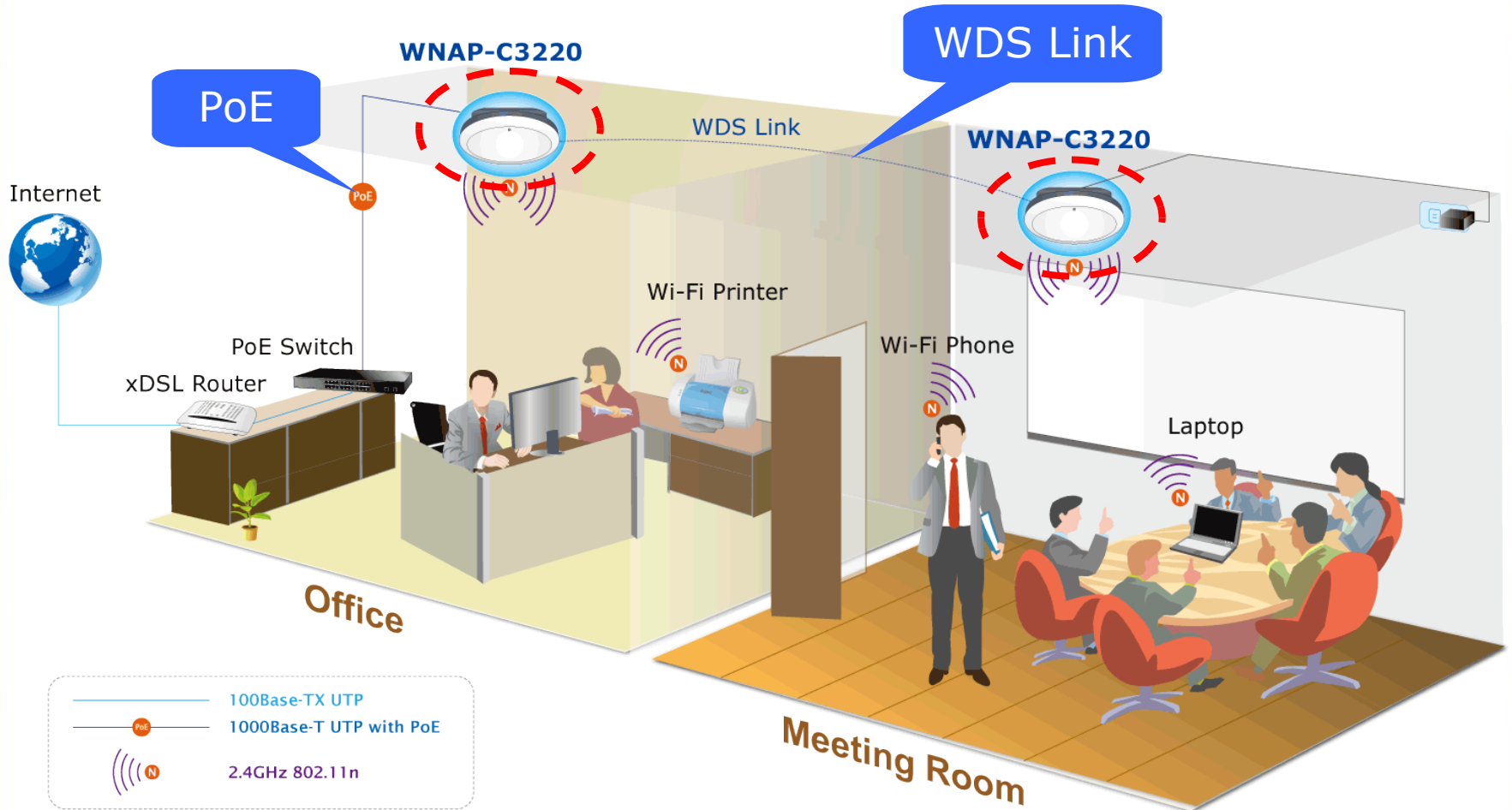
## ◆ Ceiling Mount to any place

### ✓ Restaurant



# Applications

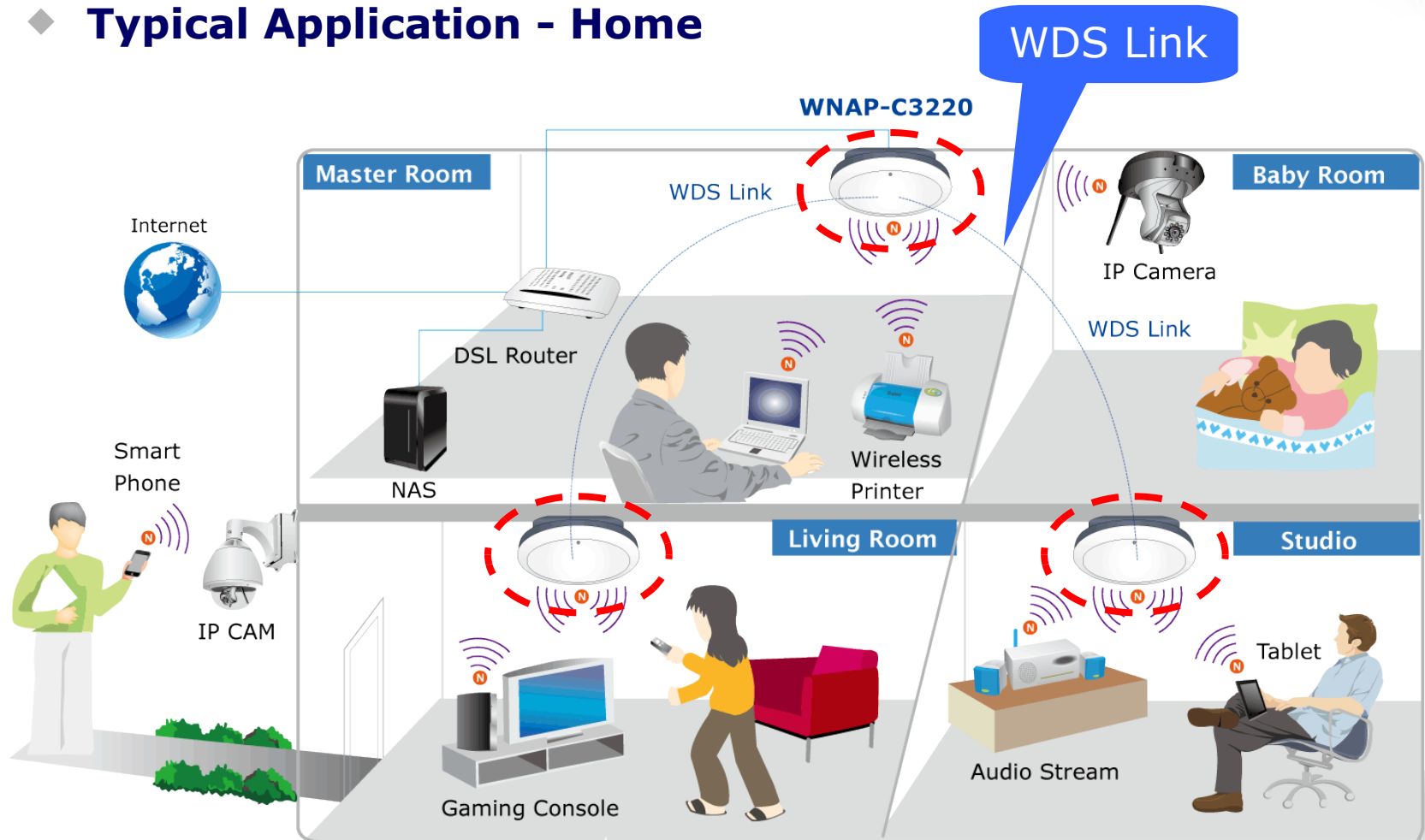
## ◆ Typical Application - Office



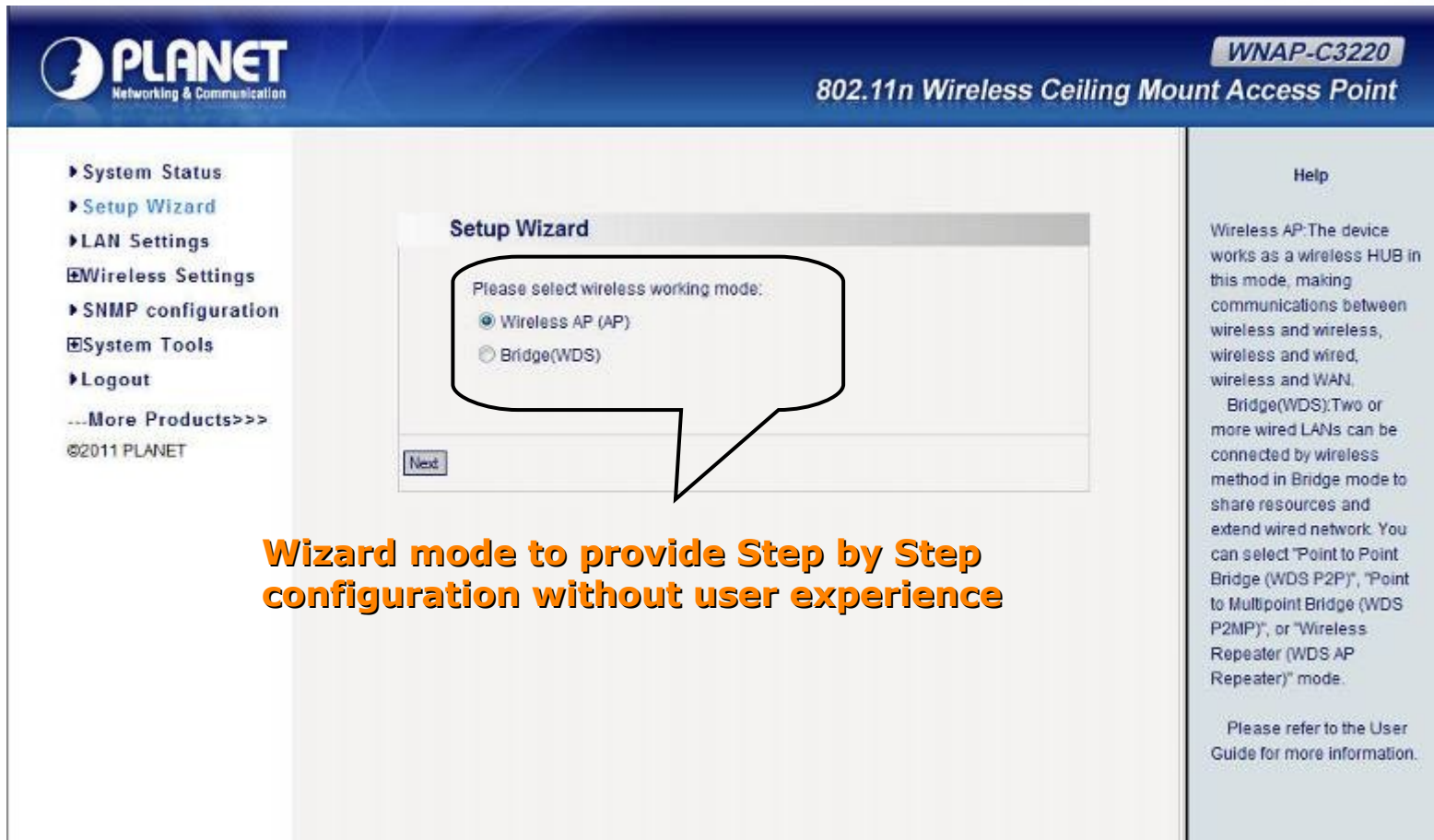


# Applications

## ◆ Typical Application - Home



# Web UI – Setup Wizard



**PLANET**  
Networking & Communication

**WNAP-C3220**  
802.11n Wireless Ceiling Mount Access Point

- ▶ System Status
- ▶ Setup Wizard
- ▶ LAN Settings
- ▣ Wireless Settings
- ▶ SNMP configuration
- ▣ System Tools
- ▶ Logout
- ...More Products>>>
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**Setup Wizard**

Please select wireless working mode:

- Wireless AP (AP)
- Bridge(WDS)

Next

**Help**

Wireless AP: The device works as a wireless HUB in this mode, making communications between wireless and wireless, wireless and wired, wireless and WAN.

Bridge(WDS): Two or more wired LANs can be connected by wireless method in Bridge mode to share resources and extend wired network. You can select "Point to Point Bridge (WDS P2P)", "Point to Multipoint Bridge (WDS P2MP)", or "Wireless Repeater (WDS AP Repeater)" mode.




Please refer to the User Guide for more information.

**Wizard mode to provide Step by Step configuration without user experience**

# Comparison - Internal

Model	WNAP-C3220	WNAP-3000PE	WNAP-1110	WNAP-1120PE
Feature				
Ethernet Port	<b>1 x 10/100/1000Mbps</b>	1 x 10/100/1000Mbps	1 x 10/100Mbps	1 x 10/100Mbps
PoE	<b>802.3af PoE</b>	802.3af PoE	Passive	802.3af PoE
Wireless Interface	802.11b/g/n, 2T2R	802.11b/g/n, 3T3R	802.11b/g/n, 1T1R	802.11b/g/n, 2T2R
Wireless Antenna	Built-in 2dBi Printed Antenna	2dBi detachable 3 x RP-SMA	2dBi detachable 3 x RP-SMA	3dBi detachable 2 x RP-SMA
Wireless speed	<b>300Mbps</b>	300Mbps	150Mbps	300Mbps
Button	Reset	Reset	WPS/Reset	WPS/Reset
Wireless Encryption	64/128-bit WEP WPA1/2, WPA-PSK1/2, 802.1x	64/128/152-bit WEP WPA1/2, WPA-PSK1/2, 802.1x	64/128/152-bit WEP, WPA1/2, WPA-PSK1/2, 802.1x	64/128-bit WEP, WPA1/2, WPA-PSK1/2, 802.1x
Operation mode	AP, WDS PtP, WDS PtMP, WDS Repeater	AP, WDS PtP, WDS PtMP, WDS Repeater	AP, Client, WDS PtP, WDS PtMP, WDS Repeater, Universal Repeater	AP, Client, WDS PtP, WDS PtMP, WDS Repeater, Universal Repeater
WDS Max.	4	8	4	4
MAC Address Filtering	Yes, up to 50	Yes	Yes, up to 20	Yes
WMM	Yes	Yes	Yes	Yes
SNMP	SNMP v1 / v2c	SNMP v1 / v2c / v3	Yes	-
Setup Wizard	Yes	-	-	-
System Log	Yes	Yes, and E-mail Alert	Yes	Yes

# Comparison - External

Model	PLANET/WNAP-C3220	EnGenius /EAP-3660	D-Link/DWL-3140
Features			
Ethernet Port	10/100/1000Mbps	10/100Mbps	10/100Mbps
Wireless Interface	802.11b/g/n	802.11b/g	802.11b/g
Wireless Antenna	Built-in 2dBi	Built-in 4dBi	Built-in antenna
Wireless Speed	300Mbps	54Mbps	108Mbps
H/W Button	Reset	Reset	Reset
PoE	802.3af	802.3af	802.3af
Wireless Encryption	64/128-bit WEP, WPA1/2, WPA-PSK1/2, 802.1x	64/128/152-bit WEP, WPA1/2, WPA-PSK1/2, 802.1x	64/128/152-bit WEP, WPA1/2, WPA-PSK1/2, 802.1x
SSID Broadcast	Yes	Yes	Yes
Operation Mode	AP, WDS PtP, WDS PtMP, WDS Repeater	AP, Client, WDS PtP, WDS PtMP, Universal Repeater	AP
WMM	Yes	Yes	Yes
Setup Wizard	Yes	-	-
SNMP	Yes	Yes	Yes
System Log	Yes	Yes	Yes

# Appendix - Sales Target

## ◆ Target Markets

- ✓ Enterprise / SMB Office
- ✓ Hotel / Resort
- ✓ Restaurant
- ✓ School
- ✓ Airport
- ✓ Custom Home
- ✓ Shopping Mall

## ◆ Target Customers

- ✓ Who buys 11n Wireless Access Point
  - WNAP-1110, WNAP-1120PE, WNAP-3000PE



# Appendix

## ◆ Related PoE Injector / PoE Switch Products

<b>Model Name</b>	<b>Description</b>
<b>POE-152</b>	<b>IEEE 802.3af Power Over Ethernet Injector (10/100/1000Mbps)</b>
<b>GSD-802PS</b>	<b>8-Port 10/100/1000Mbps Web Smart PoE Switch</b>
<b>SGSW-24040P</b>	<b>24-Port Gigabit PoE Managed Stackable Switch / 220W</b>
<b>POE-1200G</b>	<b>12-Port Gigabit IEEE 802.3af Power over Ethernet Injector Hub</b>
<b>POE-2400G</b>	<b>24-Port Gigabit IEEE 802.3af Power over Ethernet Injector Hub</b>

## ◆ Related Wireless Client Products

<b>Model Name</b>	<b>Description</b>
<b>WNL-U554</b>	<b>802.11n Wireless USB 2.0 Adapter</b>
<b>WNL-U554A</b>	<b>802.11n Wireless USB 2.0 Adapter External 2dBi Antenna</b>
<b>WNL-U554M</b>	<b>802.11n Micro Wireless USB 2.0 Adapter</b>
<b>WNL-9331</b>	<b>802.11n Wireless PCI Adapter</b>
<b>WNL-9501</b>	<b>802.11n Wireless PCI Express Adapter</b>



# ACTIVATING IP POWER