Z-COM, Inc.
SP220-C02
## 802.11ac Wireless Access Point Quick Setup Guide

This Quick Setup Guide provides step-by-step instructions on how to set up your Access Point. After completing the steps described in this Guide, you will be able to place the AP at your site and provide wireless network access to users.

PACKAGE CONTENTS

• Wireless Access Point (1)
• Mounting screws and bracket (1)

HARDWARE OVERVIEW
Front View
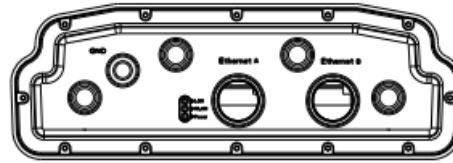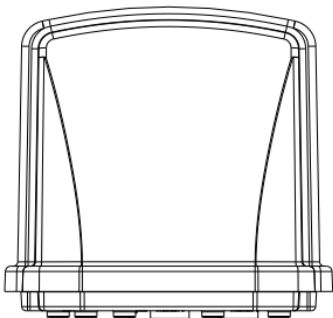
LED Indicators on the Device

No	LED	State	Description
1	PWR	Off	No power to AP
		Green On	AP power on, device ready
2	WLAN	Off	2.4G/5G radio disabled
		Blinking Green	2.4G/5G radio enabled or data being forwarded
3	LAN	Off	Ethernet port not connected
		Green On	Ethernet port connected
		Blinking Green	Ethernet link activity

Bottom View
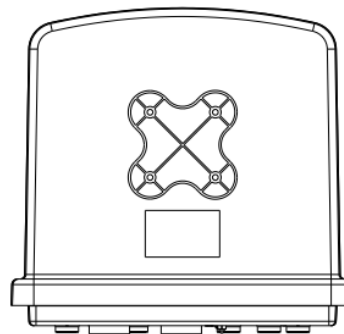
Rear View
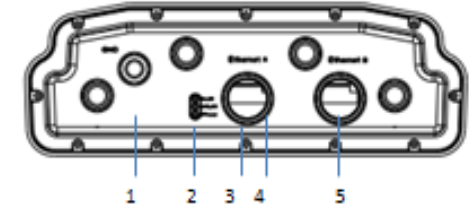
No.	Item
1	Ground
2	LED
3	PoE/LAN Port
4	Reset Button
5	LAN Port (Option)

SETUP REQUIREMENTS
Before installing your Access Point, be sure that you have the following:

• A computer running Windows 7, Vista, or XP
• A CAT5 UTP cable of required length
• Power adapter/PoE injector came with the package. (4-Pair 802.3at PoE injector 60W)

STEP 1: POWER ON THE AP
The Access Point comes with a PoE injector kit for connecting to power over the Ethernet port. The Access Point automatically turns on as soon as it is connected to a power source.

1. Insert one end of an Ethernet cable to the **P+D/OUT** port on the PoE injector.
2. Insert the other end to the **LAN/PoE** port on the Access Point.
3. Connect a power cord to the PoE injector.
4. Connect the power plug to a wall socket.

STEP 2: CONNECT THE AP TO YOUR PC

1. Insert one end of an Ethernet cable to the **DATA/IN** port on the PoE injector as figured above.
2. Insert the other end to the assigned LAN port on your PC as figured above.
3. From your computer, go to Start > Settings > Network Connections or Start > Control Panel > Network Connections.
4. When the Network Connections window appears, right-click the icon for Local Area Connection, and then click select Properties.
5. Select Internet Protocol (TCP/IP) from the scrolling list, and then click Properties.
6. Select Use the following IP address option (if it is not already selected), and then make the following entries:
   • IP address: Any address in the 192.168.1.x network
   • Subnet mask: 255.255.255.0
7. Click **OK** to save your changes, and exit the dialog box.

STEP 3: LOG INTO THE AP

1. On your PC, open a Web browser window.
2. In the browser, type https://192.168.1.1 and press <Enter> to connect to the AP.
3. When a security alert dialog box appears, click OK/Yes to proceed.
4. When the login page appears, enter the following:
   • Username: admin
   • Password: password
5. Click Login.

STEP 4: CONFIGURE THE AP

The procedure for completing the Access Point's essential configuration depends on whether you want it to be managed by either AP controller or to operate as a standalone Access Point. Refer to the section that is relevant to your deployment:

• Configuring for Management by AP Controller

• Configuring for Standalone Operation

Configuring for Management by AP Controller

To configure the Access Point to be managed by the AP controller, you must ensure that the APs will be able to locate and connect to the controller when powered on. Specifically, you need to ensure the following.

• When connected to the network, each AP is assigned a valid IP address
• APs are able to locate and connect the controller

The Access Point requires a unique IP address (fixed IP or DHCP IP) on a network that has connectivity to a controller. The DHCP server can be an existing network server or a ZDC controller configured as a DHCP server.

1. Once login, first assign a fixed IP address or a DHCP IP to the AP under **Current IP Setting**. Under **Wireless Switch Setting**, select Connect With **Wireless Switch Via IP** and input the IP address of the AP access controller. Click Apply to take effect.
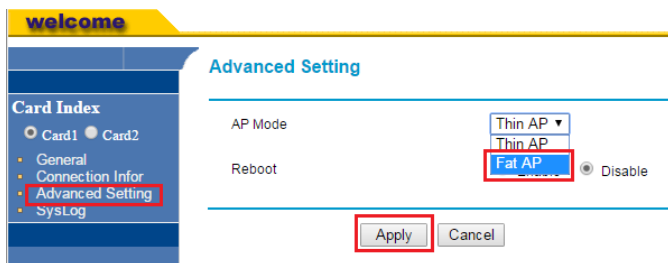

2. On the main menu on the left, go to **Connection Info** to check the connection status with the AP controller. If the tunnel has been made successfully, the connection status will show: Connected.
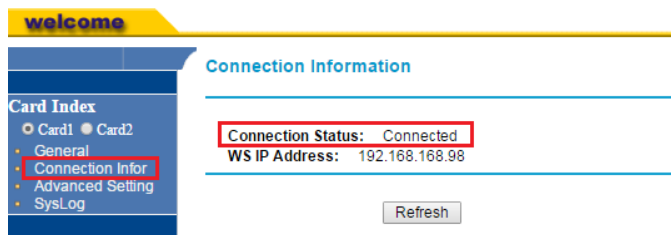
Configuring for Standalone Operation

Before configuring fat AP Basic settings, make sure that AP mode is set to **Fat AP.**

1. If currently in Thin AP Mode: On the main menu on the left, click **Advanced Setting**. Select **Fat AP** from the drop-down list. Click Apply to take effect.


2. On the main menu on the left, click **Basic Setup**. In the **Basic Setup** page, go to the section Configure AP as. If you want to assign a fixed IP address, select **Static IP**. Enter the parameters in the following fields: IP Address, Subnet Mask, Default Gateway, Primary DNS Server, and Secondary DNS Server. If you want the wireless AP to obtain the address from the DHCP Server automatically, select **DHCP Client**. Click Apply.
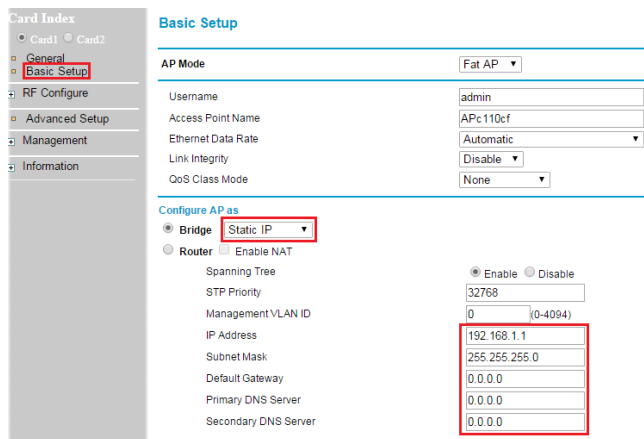
3. Go to **RF Configure** > **Wireless Settings**. (For dual band 5G setting, select Card 2 first then go to **RF Configure** > **Wireless Settings**.)

> **Note:**
> For dual band APs, the two radios (2.4GHz and 5GHz) need to be configured separately on the Web interface. The rest of the configuration procedures are the same as for 2.4G and 5G radio.
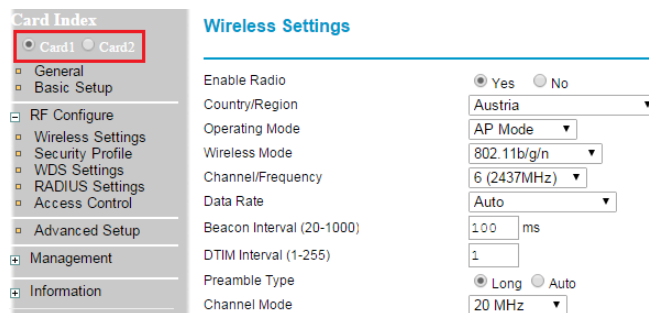
These are the essential wireless settings that will enable wireless devices on the network to associate with the Access Point.

4. Configure the common RF setting as such **Country/Region** domain and **Channel**.
5. Click Apply to save the changes.
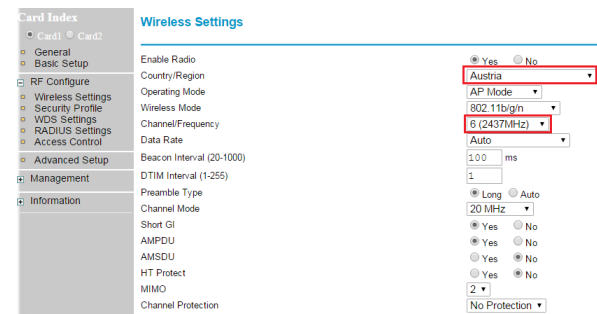
6. Go to **RF Configure** > **Security Profile**.
7. Click one of the profiles #, tick the Enable box and press Edit.
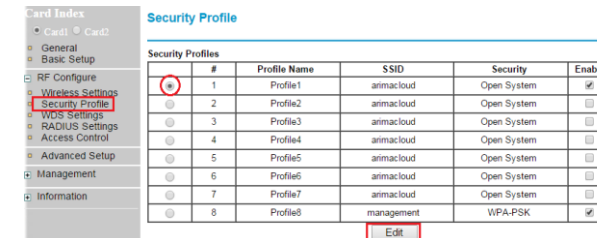
8. Clear the **Security Profile Name** and Wireless Network Name (SSID) box, and then type a unique name that you desire to call this wireless network. This will help users identify this wireless network in their wireless network connection.
9. Adjust the maximum connected users if necessary.

10. In **Network Authentication**, select the desire authentication method and then enter the encryption phrase accordingly.

11. Click Apply to save the changes.
12. Click Logout to exit the Web interface.

STEP 4: VERIFY THE CONNECTION

1. Connect the AP to your network.
2. Use any wireless-enabled computer or mobile device to search for and select the wireless network you've previously configured.
3. If you can connect, open a browser and link to any public website.

STEP 5: INSTALL THE AP

1. Disconnect the AP's power adapter from the power outlet (or disconnect the PoE cable).
2. Move the AP to its permanent location (accessible to both power source and network connections).

Note:
Some placement guidelines you should follow to maximize performance and coverage.
The Access Point 's ideal orientation is pole mount (e.g street light pole) with its **dome pointing straight down**. All APs should be mounted as high and as visible as possible. 10 meter installation height least is suggested. Try to avoid any obstructions, especially those in close proximity to the AP . The signal strength it will receive depends largely on its position, so make sure that sufficient survey has been made to determine the best placement for maximum range, coverage, and network performance before installing. Nevertheless, as RF can be affected by many variables, your actual performance may vary from the planned design.

MOUNTING THE ACCESS POINT

1. Secure the Access Point to the mounting base with the provided screws.
2. Press the mounting bracket to the T-bar at a pre-determined location.
3. On the opposite side of the T-bar, position the T-bar clip.
4. Insert the washers over the retaining screws and insert through the T-bar clip and into the mounting bracket.

5. Secure the Access Point and mounting base to the mounting bracket with the spring washers and screws.
6. Align the Access Point and mounting base assembly with the mounting bracket.
7. Insert the adjusting screws through the mounting base and secure.

Note:
Do not tighten the screws completely at this time to allow for final tilt down adjustments.
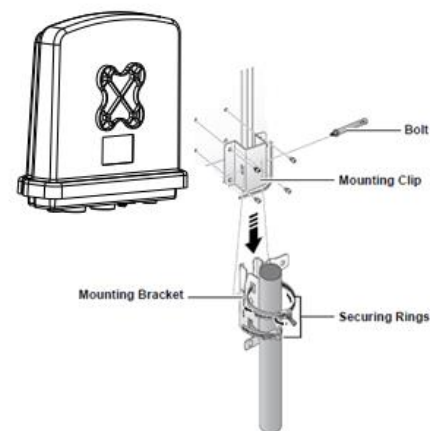
STEP 6: WATERPROFFING THE CABLE
You need to waterproof the LAN port using the supplied sealing cap.

1. Slide the locking nut over the bare end of the Ethernet cable.
2. Slightly pry open the gasket and rubber stopper, and insert the Ethernet cable.

3. Slide the gasket and rubber stopper into the locking nut.
4. Connect the RJ-45 connector into the LAN port of the Access Point.
5. Flush the gasket, rubber stopper and locking nut together into the LAN port opening, then twist the locking nut to seal the opening.
6. Slide the sealing cap over the bare end of the Ethernet cable.
7. Tighten the sealing cap.

LAN port
RJ-45 Connector
Locking Nut
Ethernet Cable
Sealing Cap

STEP 7: POWER AND CONNECT

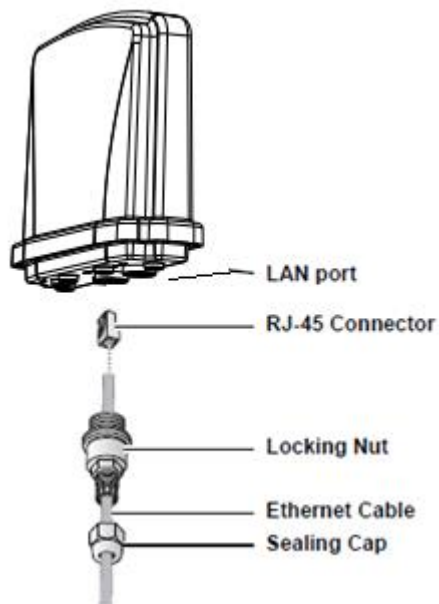1. Insert the other end to the **LAN/PoE** port on the Access Point.

2. Insert the other end of an Ethernet cable to the **P+D/OUT** port on the PoE injector. Make sure the Cat5e cable from the Access Point is long enough to reach the PoE injector.
3. Insert one end of an Ethernet cable to the **DATA/IN** port on the PoE injector as figured above.
4. Connect the other end of the Ethernet cable to the switch or a PC.
5. Connect a power cord to the PoE injector.
6. Connect the power plug to a wall socket.
6. Perform a spot-check to verify if the PWR and LAN LED are lit to make sure the AP is operating normally

Caution:
1. Make sure that you form a 3"-5" drip loop in any cable that is attached to the Access Point. This will prevent water from running along the cable and entering the Access Point or the building where the cable terminates.
2. Be sure that grounding is available and that it meets local and national electrical codes. For additional lightning protection, use lightning rods and lightning arrestors.

STEP 8: VERIFY THE CONNECTION

1. Use any wireless-enabled computer or mobile device to search for and select the wireless network you've previously configured.
2. If you can connect, open a browser and link to any public Web site.

3. From PC's Network - Wireless Properties page. Observe the wireless signal quality and speed.

Specifications

Specifications	
Dimensions	310 x 305 x 94 mm
Weight	1.4 kg
Networking Interface	(2) 10/100/1000 Ethernet Ports
Buttons	(1) Reset to Defaults
Antennas	(2) 2GHz 5dBi Antennas (2) 5GHz 5dBi Antennas
Wi-Fi Standards	802.11 a/b/g/n/ac
Power Method	802.3af/at (PoE/PoE+)
Power Supply	48V, 0.5A PoE
Max. Power Consumption	≤ 20W
BSSID	Up to 8 per Radio
Wireless Security	WEP, WPA-PSK, WPA-Enterprise (WPA/WPA2, TKIP/AES)
Certifications	CE, FCC, NCC
Mounting	Wall/Ceiling(Kits Included)
Operating Temperature	-40 – 70 ℃
Operating Humidity	10 to 90 % Non-condensing

Compliance Information

RF Exposure Warning

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be located or operating in conjunction with any other antenna or transmitter.

CE Marking

CE marking on this product represents the product is in compliance with all directives that are applicable to it.

$$C\,E$$

Note: This device meets Max. TX power limit per ETSI regulations.

RoHS/WEEE Compliance Statement

European Directive 2012/19/EU requires that the equipment bearing this symbol on the product and/ or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams.

It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about the disposal of your old equipment, please contact your local authorities, waste disposal service, or the shop where you purchased the product.

Declaration of Conformity

Hereby, Z-COM, Inc. declares that the radio equipment type SP220-C03 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:
https://www.zcom.com.tw/servicepage

Federal Communications Commission

FCC Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.
15.21
You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.
FCC RF Radiation Exposure Statement:
1)This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2)This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference and
2) This device must accept any interference received, including interference that may cause undesired operation of the device.

NCC使用手冊警語:

根據 NCC 低功率電波輻射性電機管理辦法規定：
第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

減少電磁波影響，請妥適使用。
本產品使用安裝時，應避免影響附近雷達系統之操作。
高增益指向性天線，只得應用於固定式點對點(Point to Point)系統應用。
本器材須經專業工程人員安裝及設定，始得設置使用，且不得直接販售給一般消費者。

本產品使用時，建議至少距離人體20cm以上。
電磁波曝露量MPE標準值1mW/cm2 ，送測產品實測值為：0.289 mW/cm2。