R320 – Indoor Enterprise AP **Ruckus Wireless Inc., an ARRIS Company**

Federal Communications Commission Notices

This product 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.

Caution: Changes or modifications to this equipment that have not been approved by Ruckus Wireless may void the user's authority to operate this equipment.

For Class B 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.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

This device is restricted for indoor use only and meets all the requirements specified in Part 15, Section 15.407 of the FCC Rules. This transmitter require professional installation and must not be co-located or operating in conjunction with any other antenna or transmitter.
Note: The country code selection is for non-US models only and is not available on US model. Per FCC regulation, Wireless product marketed in the US must be restricted to operate only on spectrum allocated per FCC Rules and Regulations.

Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance **20 cm** between the radiator & your body.

Canada Statement

Under ISED regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by ISED. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.
Conformément à la réglementation d'ISED, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par ISED. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

This device complies with ISED licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Operation of this device in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems. Operation in the 5600-5650 MHz band is not allowed in Canada.

Le dispositif de fonctionnement dans la bande 5150-5250 MHz est réservé à une utilisation en intérieur pour réduire le risque d'interférences nuisibles à la co-canal systèmes mobiles par satellite. Opération dans la bande 5600-5650 MHz n'est pas autorisée au Canada.

Ce produit est destiné à être installé dans un endroit à accès restreint et est marqué d'un avertissement visible que la surface peut être chaude
Dynamic Frequency Selection (DFS) for devices operating in the bands 5250- 5350 MHz, 5470-5600 MHz and 5650-5725 MHz.
Sélection dynamique de fréquences (DFS) pour les dispositifs fonctionnant dans les bandes 5250-5350 MHz, 5470-5600 MHz et 5650-5725 MHz.
For indoor use only and Professional installation is required.
Pour une utilisation en intérieur uniquement, Une installation professionnelle est requise.

Radiation Exposure Statement
The device has been found to be compliant to the requirements set forth in CFR 47 Sections 2.1091 and ISED RSS-102 for an uncontrolled environment. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.
Le dispositif a été jugé conforme aux exigences énoncées dans les articles 47 CFR 2.1091 et ISED RSS-102 pour un environnement non contrôlé. L'antenne (s) utilisée pour ce transmetteur doit être installé pour fournir une distance de séparation d'au moins 20 cm de toutes les personnes et ne doit pas être co-localisés ou fonctionner en conjonction avec une autre antenne ou transmetteur.

Mexico Statement

"La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada."

European Union Notices and National Restrictions

AT	FI	IT	PL	UK	RO
BE	FR	LV	PT	IS	TR
CY	DE	LT	SK	LI	HR
CZ	EL	LU	SI	NO	
DK	HU	MT	ES	CH	
EE	IE	NL	SE	BG	

RF Output power:
WLAN 2.4GHz – 19.94 dBm
WLAN 5150-5350MHz – 22.95 dBm
WLAN 5470-5725MHz – 29.32 dBm
WLAN 5725-5875MHz – 23.00 dBm

The installation instructions clearly state that the ITE is to be connected only to PoE networks without routing to the outside plant.

Supported operational modes: 2.4GHz: 802.11b, 802.11g, 802.11n (HT20 & HT40); 5GHz: 802.11a, 802.11n (HT20 & HT40), 802.11ac (VHT20 & VHT40), 802.11ac (VHT80)
The frequency band 5150 – 5350 MHz is restricted to indoor use. This product is in compliance with the following ETSI standards:

- Radio: ETSI EN 300 328, ETSI EN 301 893; UK OFCOM IR2030:2017
- EMC: EN 301 489-1, EN 301 489-17, EN 55032, EN 55024
- Safety: EN 60950-1, EN 62368-1, EN 62311

This Product is intended to be installed at a restricted access location and is marked with a visible warning that the surface may be hot

Professionally Installed Products

The product is to be installed according to the installation instructions. The Use/Operator does not have access to the device once the device is installed and in use. Provisions for permanent grounding is provided.

1. Installation personal: This product is designed for specific application and needs to be installed by a qualified personal who has RF and related rule knowledge. The general user shall not attempt to install or change the setting.
2. Installation location: The product shall be installed at a location where the radiating antenna can be kept 20 cm from nearby person in normal operation condition to meet regulatory RF exposure requirement
3. Installation procedure: Please refer to user's manual for the detail.
4. Warning: Please carefully select the installation position and make sure that the final output power does not exceed the limit set force in US CFR 47 Part 15 section 15.247 & 15.407. The violation of the rule could lead to serious federal penalty.

Products intended to be powered by an external power supply:

Caution –This product is intended to be supplied by a Listed Direct Plug-In Power Unit marked Class 2 or. Available Ruckus power supplies intended for product operation are identified in the product datasheet – PSU input rating: DC 12V 1.0A. The last two digits of the power supply part number represent the country code. For additional applicable power supplies/options, see user instructions and product datasheet.

Medical Statement

Ruckus Wireless Access Points shall only be used in ME systems where the intended EM ENVIRONMENT does NOT does not rely on the WLAN radio link for BASIC SAFETY or ESSENTIAL PERFORMANCE of the ME SYSTEM.

Australia and New Zealand Statement

This device complies with the ACMA requirements for a WiFi device namely Radiocommunications (Short Range Devices) 2014 and Radiocommunications (Compliance Labelling – Devices) Notice 2014 and the New Zealand Radiocommunications Regulations (General User Radio Licence for Short-Range Devices). The equipment complies with the ACMA and New Zealand requirements for radiation exposure for a "general user/non-aware user". This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body. This equipment complies with the Australian and New Zealand safety requirements and should only be used with the specified power adapter carrying a RCM mark and Electrical Approval No.

Brazil Statement

For Brazil, those products are designed for specific application and needs to be installed by a qualified personal who has RF and related rule knowledge. Regarding the operation on range of 5150 MHz to 5350 MHz, the average output power of the equipment must be adjusted to the maximum limit of - 0,48 dBm and for 5470 MHz to 5725 MHz, the average output power of the equipment must be adjusted to the maximum limit of 6,44 dBm.
Para o Brasil, esses produtos são projetados para aplicações específicas e necessidades a serem instalados por um pessoal qualificado que tenha conhecimento regra RF e afins.Em relação à operação em série de 5150 MHz a 5350 MHz, a potência média de saída dos equipamentos deve ser ajustado para o limite máximo de - 0,48 dBm e para 5470 MHz a 5725 MHz, a potência média de saída dos equipamentos deve ser ajustada ao limite máximo de 6,44 dBm.
Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.

Nigeria Statement

Connection and use of this communications equipment is permitted by the Nigerian Communications Commission

Thailand Statement

This telecommunication equipment conforms to NTC technical requirement

Hong Kong Statement

The 5.15 – 5.35 GHz band shall be restricted to indoor operations only. Obey local regulations when using this product.

Taiwan Statement

使用此產品時應避免影響附近雷達系統之操作 This product should not affect the operation of nearby radar systems.
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。
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.
無線資訊傳輸設備避免影響附近雷達系統之操作

Japan - Class B ITE

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。 取扱説明書に従って正しい取り扱いをして下さい。 ＶＣＣＩ－Ｂ

限用物質含有情況標示聲明書

Declaration of the Presence Condition of the Restricted Substances Marking

設備名稱：無線網路基地台，型號（型式）： R320

Equipment name Type designation (Type)

單元Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻Hexavalent chromium (Cr^{+6})	多溴聯苯Polybrominated Biphenyls (PBB)	多溴二苯醚Polybrominated diphenyl ethers (PBDE)
Enclosure - Top 頂部外殼	O	O	O	O	O	O
Enclosure - Bottom 底部外殼	O	O	O	O	O	O
PWB 電路板	-	O	O	O	O	O
Connector and Receptacle 插口	O	O	O	O	O	O

備考1.〝超出0.1 wt %〞及〝超出0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。

Note 1："Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.

備考2.〝O〞係指該項限用物質之百分比含量未超出百分比含量基準值。

Note 2："○" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考3.〝－〞係指該項限用物質為排除項目。

Note 3：The "–" indicates that the restricted substance corresponds to the exemption.

EU Declaration of Conformity

Hereby, Ruckus Wireless Inc., declares that the radio equipment type R320 is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the following internet address: www.ruckuswireless.com

Български [Bulgarian]	С настоящото Ruckus Wireless декларира, че този тип радиосъоръжение е в съответствие с Директива 2014/53/ЕС.
Česky [Czech]	Ruckus Wireless tímto prohlašuje, že tento Radio LAN je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 2014/53/EU.
Dansk [Danish]	Undertegnede Ruckus Wireless erklærer herved, at følgende udstyr Radio LAN overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EU.
Deutsch [German]	Hiermit erklärt Ruckus Wireless, dass sich das Gerät Radio LAN in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 2014/53/EU befindet.
Eesti [Estonian]	Käesolevaga kinnitab Ruckus Wireless seadme Radio LAN vastavust direktiivi 2014/53/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, Ruckus Wireless declares that this Radio LAN is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.
Español [Spanish]	Por medio de la presente Ruckus Wireless declara que el Radio LAN cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2014/53/EU.
Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Ruckus Wireless ΔΗΛΩΝΕΙ ΟΤΙ Radio LAN ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/EU.
Français [French]	Par la présente Ruckus Wireless déclare que l'appareil Radio LAN est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2014/53/EU.
Italiano [Italian]	Con la presente Ruckus Wireless dichiara che questo Radio LAN è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2014/53/EU.
Latviski [Latvian]	Ar šo Ruckus Wireless deklarē, ka Radio LAN atbilst Direktīvas 2014/53/EU būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo Ruckus Wireless deklaruoja, kad šis Radio LAN atitinka esminius reikalavimus ir kitas 2014/53/EU Direktyvos nuostatas.
Nederlands [Dutch]	Hierbij verklaart Ruckus Wireless dat het toestel Radio LAN in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EU.
Malti [Maltese]	Hawnhekk, Ruckus Wireless, jiddikjara li dan Radio LAN jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 2014/53/EU.
Magyar [Hungarian]	Alulírott, Ruckus Wireless nyilatkozom, hogy a Radio LAN megfelel a vonatkozó alapvető követelményeknek és az 2014/53/EU irányelv egyéb előírásainak.
Polski [Polish]	Niniejszym Ruckus Wireless oświadcza, że Radio LAN jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 2014/53/EU.
Português [Portuguese]	Ruckus Wireless declara que este Radio LAN está conforme com os requisitos essenciais e outras disposições da Directiva 2014/53/EU.
Slovensko [Slovenian]	Ruckus Wireless izjavlja, da je ta Radio LAN v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 2014/53/EU.
Slovensky [Slovak]	Ruckus Wireless týmto vyhlasuje, že Radio LAN spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2014/53/EU.
Suomi [Finnish]	Ruckus Wireless vakuuttaa täten että Radio LAN tyyppinen laite on direktiivin 2014/53/EU oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska [Swedish]	Härmed intygar Ruckus Wireless att denna Radio LAN står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2014/53/EU.
Íslenska [Icelandic]	Hér með lýsir Ruckus Wireless yfir því að Radio LAN er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 2014/53/EU.
Norsk [Norwegian]	Ruckus Wireless erklærer herved at utstyret Radio LAN er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 2014/53/EU.

800-72094-001-A2

印刷為黑白印刷

279.4mm

215.9mm

Ruckus
Simply Better Wireless.

Access Point
Getting Started Guide

This Getting Started Guide provides getting started information for version 104.x and later Ruckus Wireless base image access points (APs).

This document assumes familiarity with the Ruckus ZoneFlex (ZF), ZoneDirector (ZD), SmartZone (SZ), and FlexMaster (FM) product lines and the features of earlier releases.

NOTE: This document covers Ruckus Wireless APs. For information about ZD and SZ controllers, as well as FM managers, please refer to their respective user documents.

NOTE: For Ruckus Wireless APs running version 104.x and later, please be advised that:

- The Ruckus Wireless AP may send a query to Ruckus containing the AP's serial number. The purpose is to enable your AP to autonomously connect with a wireless LAN controller operated by your choice of cloud service provider. Ruckus may transmit back to the AP the Fully Qualified Domain Name (FQDN) or IP address of the controller that the AP will subsequently attempt to join.
- Please be advised that this information may be transferred and stored outside of your country of residence where data protection standards may be different.

Certificate Changes

Beginning in November 2016, the existing default SSL device certificate on Ruckus APs will expire. Ruckus has been rolling out replacement certificates on APs since 2015. Build 104 makes the new replacement certificate the default SSL device certificate.

All APs shipped from Ruckus with release 104 and later will have the new replacement certificates for SSL authentication with SmartZone controllers.

Due to this change, APs with release 104 may not be able to join some older versions of SZ software. To address this limitation, the SZ has to be upgraded to 3.1.2 or later.

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The certificate expiry will require all APs to have the new replacement certificates loaded and made default to be able to join SZ with certificate check beyond November 2016. If, after November 2016, the AP is not able to join SZ, please contact Ruckus Support for assistance.

Standalone or FlexMaster-Managed Operation

Ruckus Wireless APs are shipped from the factory with a single firmware image, referred to as the "base image." APs with the base image can only operate in standalone mode with or without a FlexMaster manager.

Controller-specific features (such as Smart Mesh networking) are unavailable when the AP is running a standalone AP base image.

Refer to the *Ruckus Wireless Indoor Access Point User Guide* or the *Ruckus Wireless Outdoor Access Point User Guide* for instruction on how to configure the AP for standalone and/or FlexMaster-managed operation.

Controller Management

In addition to standalone and FlexMaster management, ZoneFlex APs can also be managed by Ruckus Wireless ZoneDirector or SmartZone controller platforms. When the AP discovers one of these controllers on the network, the AP downloads the associated controller-specific image and replaces the base image with the controller-compatible AP firmware.

"Island" SSID

Beginning with AP base image release 104.0, the "island-xxxxxx" SSID that is broadcast when an AP starts up in factory default state can be accessed using the AP's serial number as the PSK passphrase. This change makes it easier to configure an AP that has already been installed.

Ruckus Cloud Discovery

Ruckus Cloud Wi-Fi is WLAN Management-as-a-Service that enables enterprises with limited IT resources to easily set-up, monitor, and manage a high-performance multi-site WLAN of any size, without compromising on Wi-Fi performance.

Beginning with Release 104.0, all Ruckus 802.11ac APs have the ability to discover and register with a Ruckus Cloud controller (note that 802.11n APs do not have this capability). 11ac APs with 104 image will use secure HTTPS to query the AP Registrar to discover the remote/cloud controller. If found, the AP will utilize secure mechanisms (e.g., SSH port 22 and HTTPS port 11443) to communicate with the remote vSZ/Cloud controller to connect, and download firmware.

The AP will probe the AP Registrar more often in the first 14 days after initial power-up, and after that, less frequently. Once the AP finds a controller (ZD, SZ, or Cloud), it will no longer look for the AP Registrar.

NOTE: If APs are intended for management by Ruckus Cloud controller, and you have any other Ruckus controller on your local network, you must disable the option to "Automatically approve all AP join requests" from the controller UI before connecting the AP to the network. If not, the AP will register with the local controller first and will be unable to discover Ruckus Cloud.

SmartZone AP Discovery Process

SmartZone controllers running version 2.5 and later include an LWAPP2SCG utility for migrating Ruckus APs to SmartZone control.

Ruckus APs running version 104.x and later can discover SmartZone controllers without the need to enable the LWAPP2SCG service on the controller and open ports 12223 and 21 on any firewalls or NAT devices between the controller and the APs.

NOTE: Some older APs may not be able to discover an SZ controller using this discovery process. If you encounter this issue, you have two options:

- First upgrade the AP to base image 104 or later.
- Enable LWAPP2SCG service on the SZ, and open ports 12223 and 21(if needed).

正面

Controller Discovery Methods

There are four methods by which an AP can discover a (ZD or SZ) controller:

- Method 1: Controller Discovery Using L2 Subnet
- Method 2: Controller Discovery Using DHCP
- Method 3: Controller Discovery Using DNS
- Method 4: Manually Setting the Controller IP Address in the AP Web Interface

Method 1: Controller Discovery Using L2 Subnet

When the AP is powered on and connected to the same Layer 2 IP subnet as a controller, the AP looks for any SZ or ZD controller. It continues searching for a controller until it finds one, until the Ruckus Wireless AP Registrar service assigns it a controller, or until the installer logs into the AP web interface and configures the controller IP address manually, or until the discovery agents are disabled on the AP.

- **SZ:** When the AP finds an SZ controller on the same subnet and the controller is configured to automatically approve APs, the AP automatically updates the base image with the controller-compatible firmware image.
- **ZD:** When the AP finds a ZD controller on the same subnet and the ZD controller is configured to add APs with the base image, the AP automatically downloads the ZD-compatible firmware image.

NOTE: Ensure that "Automatically approve all join requests" is enabled on the **Configure > Access Points > Access Point Policies** page.

NOTE: If multiple SZ and ZD controllers exist on the network, the AP will attempt to associate with an SZ controller first before associating with a ZD controller. If it does not discover an SZ controller, it will begin searching for a ZD controller after a pause of about 30 seconds.

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Method 2: Controller Discovery Using DHCP

If your APs will be deployed on different subnets from the controller, you can use DHCP (Option 43) or DHCPv6 (Option 17 or 52) to allow the AP to discover the controller when it boots up, upon requesting an IP address from the DHCP server.

- **SZ**: Enter DHCP Option 43 Code 6, DHCPv6 Option 17 Code 6, or DHCPv6 Option 52.
- **ZD**: Enter DHCP Option 43 Code 3, DHCPv6 Option 17 Code 3, or DHCPv6 Option 52.

Refer to the SZ or ZD user documents for instructions on how to configure your DHCP server to automatically provide the controller address to the AP using DHCP.

NOTE: For SmartZone, IPv6 discovery takes priority if both options are configured.

Method 3: Controller Discovery Using DNS

If your APs will be deployed on different subnets from the controller, you can also use DNS to allow the AP to discover the controller when it boots up.

Refer to the SZ or ZD user documents for instructions on how to configure your DNS server to automatically provide the controller address using DNS.

- **SZ**: ruckuscontroller.<domain>
- **ZD**: zonedirector.<domain>

Method 4: Manually Setting the Controller IP Address in the AP Web Interface

1. Go to *Administration > Management* page in the AP web interface.
2. Click *Set Controller Address* **Enabled**, then enter a primary controller IP address and optionally, a secondary controller IP address, and then click **Update Settings.**

Figure 1: Sample Administration > Management Page

Returning the AP to the Base Image

After an AP has been upgraded to a controller-specific image as described above, you can return it to standalone/FlexMaster operation by upgrading the firmware back to a standalone AP base image.

Upgrade Information

To manually upgrade/downgrade the AP firmware, go to *Maintenance > Upgrade* in the AP web interface. Refer to the *Ruckus Wireless Outdoor Access Point User Guide* or the *Ruckus Wireless Indoor Access Point User Guide* for instructions on how to upgrade the AP firmware.

Figure 2: Sample Maintenance > Upgrade Page

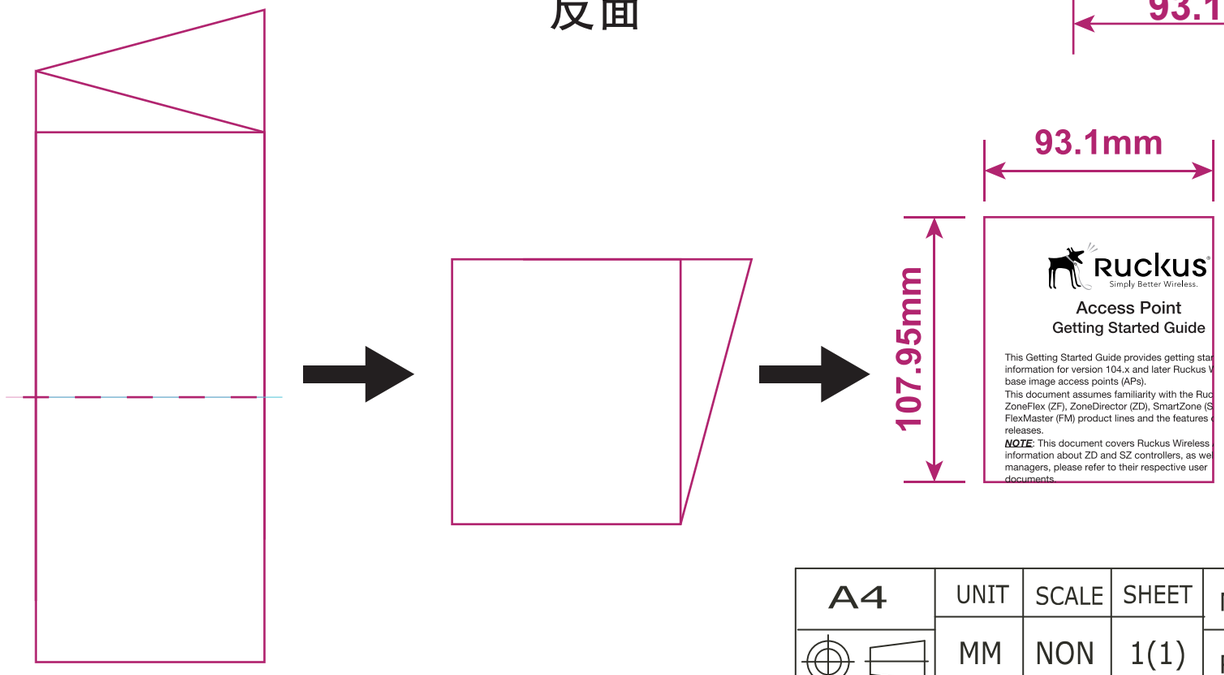
NOTE: Once the upgrade (or downgrade) is complete, you must reset the AP to factory defaults, and log in again using the factory default user name and password (un: super; pw: sp-admin, IP address: 192.168.0.1) to configure the AP for standalone operation.

反面

107.95mm

93.1mm

示意圖方式：



(客戶): Ruckus
(材質): 80g雙銅紙
(顏色): Black
(上光方式): NO
(裝釘方式): 折疊
(尺寸):展開尺寸:279.4x215.9mm
成型尺寸:93.1x107.95mm
(公差): +-1 mm

技术要求：
1. 不可有划碰伤、油污等表面缺陷
2. 印刷要求清晰无毛刺，位置精确
3. 材质及印刷内容、字体、符号、线条等同图纸

LIMITS UNLESS OTHERWISE NOTED	
X. +-	X.° +-
.X +-	.X° +-
.XX +-	.XX° +-
.XXX +-	.XXX° +-

A4	UNIT	SCALE	SHEET	MODEL No.	WJ8331-Z-RK Ruckus		
	MM	NON	1(1)	PART NAME	入门指南		
APPROVED	CHECKED	DESIGNED		PART No.	515000048347	REV	A0
		qiuxiaxie 謝秋霞 2016-09-02		LITEON 光寶科技股份有限公司 LITE-ON TECHNOLOGY CORP.			

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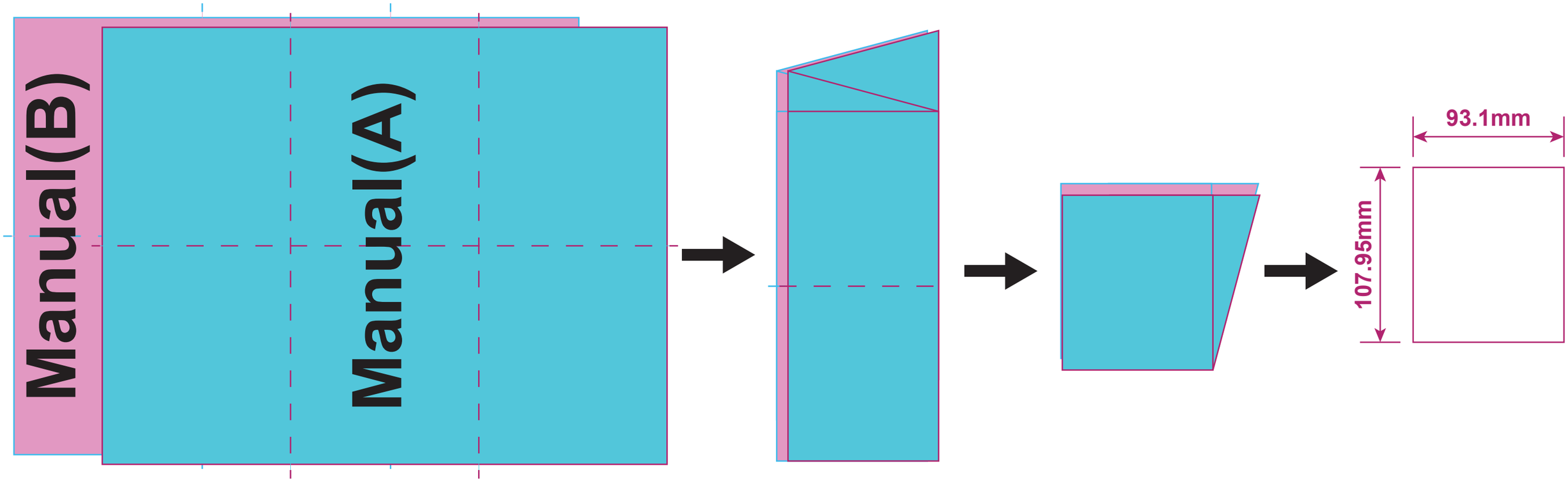
印刷為黑白印刷
Printing is black and white printing

成型方式：(示意圖)
Forming method：(Schematic diagram)

成型時Manual(A) 與 Manual(B) 同時折疊。
When forming Manual(A) and Manual(B) At the same time folding
Manual(A) 放在上面，Manual(B)放在Manual(A) 下面。同時成型。
Manual(A) superpose,Manual(B) put Manual(A) below At the same time the molding
(Manual(A) 與 Manual(B) 全部正面朝上折疊)
Manual(A) and Manual(B) Fold the entire face fold



技术要求：
technical requirements
1. 不可有划碰伤、油污等表面缺陷
There shall be no surface defects such as oil bruised
2. 印刷要求清晰无毛刺，位置精确
No burr printing requires clear and accurate location
3. 材质及印刷内容、字体、符号、线条等同图纸
The material and printing content Font symbol line equivalent drawing

(客戶/Client): Ruckus
(材質/Material): 80g 雙銅紙/Double copper paper
(顏色/Color): Black
(上光方式/Glaze): NO
(裝釘方式/Binding way): 折疊/fold
(尺寸/size):展開尺寸/unfold size:279.3x215.9mm
成型尺寸/Case Size:93.1x107.95mm
(公差/tolerance): +-1 mm

! 不得含有 Must not contain any WI-QES-002 要求禁用之有毒,有害物質 Request to disable the toxic and harmful substances

LIMITS UNLESS OTHERWISE NOTED	
X. +-	X.° +-
.X +-	.X° +-
.XX +-	.XX° +-
.XXX +-	.XXX° +-

A4	UNIT	SCALE	SHEET	MODEL No.	WP8321-RK(R320) Ruckus 800-71895-001	
	MM	NON	1(1)	PART NAME	Manual	
APPROVED	CHECKED	DESIGNED		PART No.	515300185547	REV A1
		蔣浩月 HAOYUEJIANG 2018/11/05		LITEON 光寶科技股份有限公司 LITE-ON TECHNOLOGY CORP.		

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279.3mm

印刷為黑白印刷
Printing is black and white printing

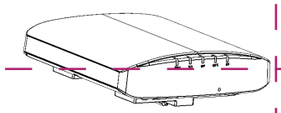
215.9mm

R320 Access Point Quick Setup Guide

This *Quick Setup Guide* provides step-by-step instructions on how to set up your Ruckus R320 access point. After completing the steps in this guide, you will be able to place the access point (AP) at your site and provide network access to wireless clients.

NOTE: The minimum software revision for the R320 is ZoneDirector (ZD) 10.2.1 native or later, or SmartZone (SZ) 5.1 new AP model or later.

FIGURE 1 R320 Top



Before You Begin

Before deploying Ruckus products, please check for the latest software and the release documentation.

- Release Notes and other user documentation are available at http://support.ruckuswireless.com/documents.
- Software upgrades are available at http://support.ruckuswireless.com/software.
- Open source information is available at http://opensource.ruckuswireless.com/open_source.

This Guide in Other Languages

- 请从以下网站获得该指南的简体中文版 https://support.ruckuswireless.com.
- Vous trouverez la version française de ce guide à l'adresse suivante https://support.ruckuswireless.com.
- このガイドの日本語版は https://support.ruckuswireless.com でご覧ください。
- 이 가이드의 한국어 버전은 웹 사이트 (https://support.ruckuswireless.com) 에서 확인하시기 바랍니다.
- Veja a versão em português (Brasil) deste guia em https://support.ruckuswireless.com.
- Puede ver la versión en español (América Latina) de esta guía en https://support.ruckuswireless.com.

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Package Contents

A complete R320 installation package includes all of the items listed below:

- R320 Access Point
- One wall-mount anchor kit, including two 1" No. 8 steel pan head Phillips sheet metal screws and wall-mount anchors.
- One external T-bar bracket (two unassembled parts)
- One unit removal pin
- Service Level Agreement/Limited Warranty Statement
- Declaration of Conformity
- Regulatory Statement
- Ruckus AP Getting Started Guide
- AP Cloud Management Insert
- This Quick Setup Guide

CONFIGURING THE AP

Step 1: Collecting the AP MAC Address

- Write down the MAC address (12 alphanumeric digits) from the outside of the AP.

NOTE: If the AP is to be managed by a Ruckus controller, then follow the controller user documents to connect the AP to your local network and configure it for initial operation. In that case, you may not need to complete the following steps.

Step 2: Collecting Setup Requirements, Hardware, and Tools

- A computer with Ethernet adapter running Windows 7 or equivalent, with Firefox or equivalent web browser.
- One Cat 5e (or better) Ethernet cable.
- An AC-to-12VDC power adapter (sold separately)

  --OR--

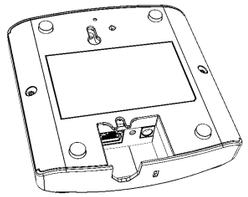
  an 802.3af-compliant Power over Ethernet (PoE) switch or PoE injector.

Step 3: Connecting Your Computer to the AP

1. After removing the AP from its package, place it next to your computer.
2. Using an Ethernet cable, connect your computer's network port to the **POE IN** port on the AP.
3. Connect the AC power adapter (sold separately) to the **12VDC** AP port, and plug the AC power adapter into a convenient and protected AC power source.

   Alternatively, connect the **POE IN** port to a PoE injector or PoE switch for both power and network connectivity.

FIGURE 2 AP Rear Panel



4. After bootup, verify that the **PWR** LED on the AP is a steady green.

Step 4: Preparing Your Computer for AP Setup

NOTE: The following procedures assume that Windows 7 is the operating system. Procedures for other operating systems are similar.

1. On your Windows 7 computer, configure your network adapter from the Local Area Connection settings as follows:
   - **Start > Control Panel > Network and Sharing Center > Change Adapter Settings**
2. Edit the TCP/IPv4 address settings as follows:
   - **Local Area Connection > Properties > Internet Protocol Version 4 (TCP/IPv4) > Properties**

     The *Internet Protocol Version 4 (TCP/IPv4) Properties* dialog box appears.

     NOTE: Write down all of the currently active settings so you can restore your computer to its current configuration when this procedure is completed.
3. Select Use the following *IP address* (if it is not already selected) and then make the following entries:
   - IP address: **192.168.0.22** (or any available address in the 192.168.0.x network, except 192.168.0.1, which is the default used by the R320 AP)
   - Subnet mask: **255.255.255.0**
   - Leave the DNS server and Default gateway fields empty.
4. Click **OK** to save your changes. Your changes are put into effect immediately.

Step 5: Logging Into the AP Web Interface

As specified in Step 4: Preparing Your Computer for AP Setup on page 1, the computer should be connected to your AP through the Ethernet port and powered on, ready for setup.

1. On your computer, open a Web browser window.
2. In the browser, enter **https://192.168.0.1** to connect to the AP.
3. Press **<Enter>** to initiate the connection. When a security alert dialog box appears, click **OK/Yes** to proceed.
4. When the Ruckus Wireless Admin login page appears, enter the following:
   - *Username*: **super**
   - *Password*: **sp-admin**
5. Click **Login**.

Step 6: Customizing the Wireless Settings

1. On the AP Web interface menu, click **Configuration > Wireless > 5G or Configuration > Wireless > 2.4G**. The *Configure > Wireless > Common* options appear.
2. Verify that the following options are active:
   - *Channel*: SmartSelect
   - *Channel Width*: 20 MHz, 40 MHz, or 80 MHz (default).
   - *Country Code*: Select the country in which the AP will be operating.

   NOTE: If you purchased the AP in the United States, then this value is fixed to United States at the factory and is not user configurable. If you purchased the AP outside the United States, then verify that the value is set to your country or region. Selecting the correct country code ensures that the AP uses only the radio channels allowed in your country or region.
3. Click **Update Settings** if you made any changes.
4. Click any of the eight **Wireless #** (Wireless LAN Number) tabs at the top of the page.
5. In *Wireless Availability*, click **Enabled**.
6. Delete the text in the *SSID* field, and then type a name for your network that will help your users identify the AP in their wireless network connection application.
7. Click **Update Settings** to save your changes.
8. If required, repeat Step 4 through Step 7 in this task for any other **Wireless #** (Wireless LAN Number) interface that you want to enable.
9. Click **Logout** to exit the Web interface.
10. Disconnect the AP from the computer and from the current power source, and then restore your computer to its original network configuration.

Step 7: Placing the AP at the Site

1. Move the AP to its permanent location (accessible to both AC or PoE power and network connection).
2. Use a Cat 5e (or better) Ethernet cable to connect your network (or PoE injector or switch) to the **POE IN** port on the AP.

   -OR--

   If you are not using an 802.3af-compliant PoE switch or PoE injector, then connect the AC power adapter to the AP, and then to a convenient power source.
3. Verify that the **POE IN** port LED is lit.

Step 8: Verifying the Installation

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

   Congratulations! Your wireless network is active and ready for use. If you need to configure advanced wireless settings, such as enabling security, refer to the *Ruckus Wireless Indoor AP User Guide*.

INSTALLING THE AP

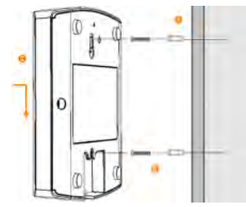
The AP can be mounted on a flat surface, on a drop-ceiling T-bar, or on a pole or flat surface. Refer to the following sections:

Mounting on a Flat Surface

The factory-supplied mounting screws and plastic wall anchors allow you to attach the AP to a wall or ceiling.

1. Use the Mounting Template on the last page of this guide to mark the locations for two drill holes on the mounting surface.
2. Use a 4.75mm (3/16") drill bit to drill holes approximately 25mm (1") deep into the mounting surface.
3. Insert the factory-supplied anchors (A in the below figure) and mounting screws (B) into the mounting surface, leaving approximately 6 mm (1/4") of the screw heads protruding from the surface.

FIGURE 3 Mounting the AP on flat surface



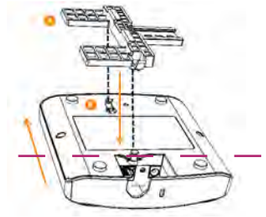
4. Place the AP onto the mounting screws so that the screw heads enter the keyholes on the AP enclosure (C), and gently press down on the AP until the locking tab in the upper AP keyhole locks the AP onto the top mounting screw.

Mounting on a Drop-Ceiling T-Bar

The factory-supplied T-bar mounting assembly kit allows you to attach the AP to recessed and flush drop-ceiling T-bars.

1. Position the studs on the bottom of the T-bar bracket (A in the below figure) to the keyholes on the AP enclosure.
2. Slide the T-bar bracket away from the Ethernet ports on the bottom of the AP until the AP retainer tab snaps into place, trapping the T-bar bracket studs in the keyholes.

FIGURE 4 Attaching the T-bar bracket to the AP



3. Gently push the ceiling tiles, if present, up and out of the way.
4. Position the T-bar bracket (A in the below figure) so its two clasps grip one edge of the T-bar (B in the below figure). Make sure that both clasps are gripping the T-bar.
5. Hold the AP in place and gently push the locking tab (C in the below figure) until its clasp grips the other edge of the T-bar.

NOTE: Make sure that all three clasps are gripping the T-bar!

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107.95mm

93.1mm

正面/front

反面/reverse side

示意圖方式：
Schematic way

139.996

Manual(A)

技术要求：
technical requirements

1. 不可有划碰伤、油污等表面缺陷
   There shall be no surface defects such as oil bruised
2. 印刷要求清晰无毛刺，位置精确
   No burr printing requires clear and accurate location
3. 材质及印刷内容、字体、符号、线条等同图纸
   The material and printing content Font symbol line equivalent drawing

(客戶/Client): Ruckus
(材質/Material): 80g 雙銅紙/Double copper paper
(顏色/Color): Black
(上光方式/Glaze): NO
(裝釘方式/Binding way): 折疊/fold
(尺寸/size):展開尺寸/unfold size:279.3x215.9mm
成型尺寸/Case Size:93.1x107.95mm
(公差/tolerance): +-1 mm

不得含有
Must not contain any
WI-QES-002
要求禁用之有毒,有害物質
Request to disable the toxic and harmful substances

LIMITS UNLESS OTHERWISE NOTED	
X. +-	X.° +-
.X +-	.X° +-
.XX +-	.XX° +-
.XXX +-	.XXX° +-

A4	UNIT	SCALE	SHEET	MODEL No.	WP8321-RK(R320) Ruckus 800-71895-001	
	MM	NON	1(1)	PART NAME	Manual	
APPROVED	CHECKED	DESIGNED		PART No.	515300185547	REV A1
		蔣浩月 HAOYUEJIANG 2018/11/05		LITEON 光寶科技股份有限公司 LITE-ON TECHNOLOGY CORP.		

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279.3mm

215.9mm

印刷為黑白印刷
Printing is black and white printing

FIGURE 5 Attaching the AP and T-bar bracket with the locking tab

When you are done, the AP is mounted.

Mounting the AP on a Flat Surface or Pole Using the Optional Secure Mounting Bracket

The customer-ordered Ruckus secure mounting bracket kit (ordering part number 902-0120-0000) includes a metal mounting bracket and provides greater security when attaching the AP to flat surfaces (walls and ceilings) and to poles.

- If you are mounting the AP on a flat surface, then you will also need an electric drill with a 4.75mm (3/16") drill bit, and the four No. 6 zinc plated screws and plastic wall anchors included with the kit.
- If you are mounting the AP on a truss or pole, then you will also need the two customer-supplied stainless steel pipe clamps.

Continue with the following:

1. If you are mounting the AP on a flat surface, then use the secure mounting bracket as a template to mark the locations for four drill holes on the mounting surface. There are four screw holes available on the secure mounting bracket.

   Fasten the bracket to the flat surface using four mounting screws and plastic wall anchors and continue with Step 3 in this task.
2. If you are mounting the AP on a pipe or pole, then feed the two customer-supplied stainless steel clamps through the slots on the secure mounting bracket. Use common hand tools to tighten the clamps around the pipe or pole.

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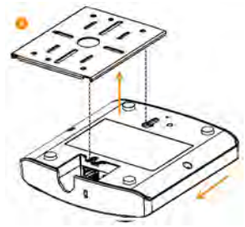
After the bracket is attached, continue with Step 3 in this task.

FIGURE 6 Attaching the AP to the secure mounting bracket



3. Insert the two studs on the secure mounting bracket (A) into the keyholes on the bottom of the AP.
4. Slide the AP toward the Ethernet port until the locking tab in the upper AP keyhole locks the AP onto the top mounting bracket stud.

Troubleshooting

CAUTION! If required, you can reset the AP to its factory default settings by using a straightened paper clip to press and hold the reset button located between the POE IN and 12VDC ports, for six or more seconds. DO NOT DO THIS UNLESS SO INSTRUCTED. (Doing this resets the AP IP address to 192.168.0.1.)

NOTE: After a reset, you can access the internal AP web interface using https://192.168.0.1. Your device must use any other address from 192.168.0.2 through 192.168.0.254, with subnet mask 255.255.255.0. The username is super, and the password is sp-admin. Refer to the *Outdoor Access Point User Guide* for information on configuring and operating the AP. This document is available at https://support.ruckuswireless.com.

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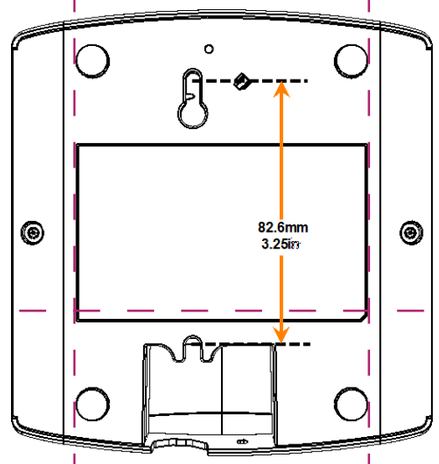
正面/front



107.95mm

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反面/reverse side

93.1mm

示意圖方式：
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Manual(B)

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