

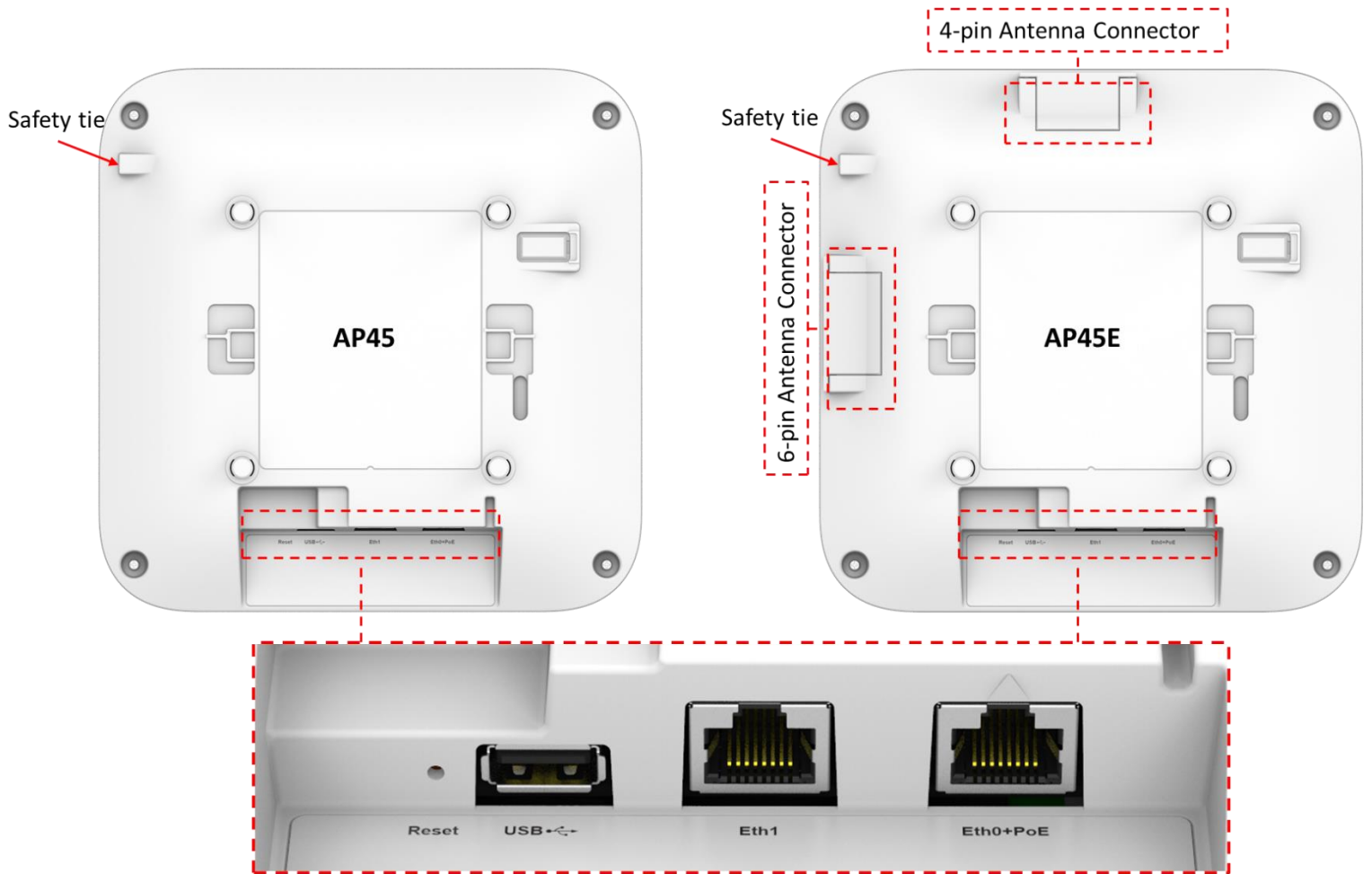


## AP45 Hardware Installation Guide

### Overview

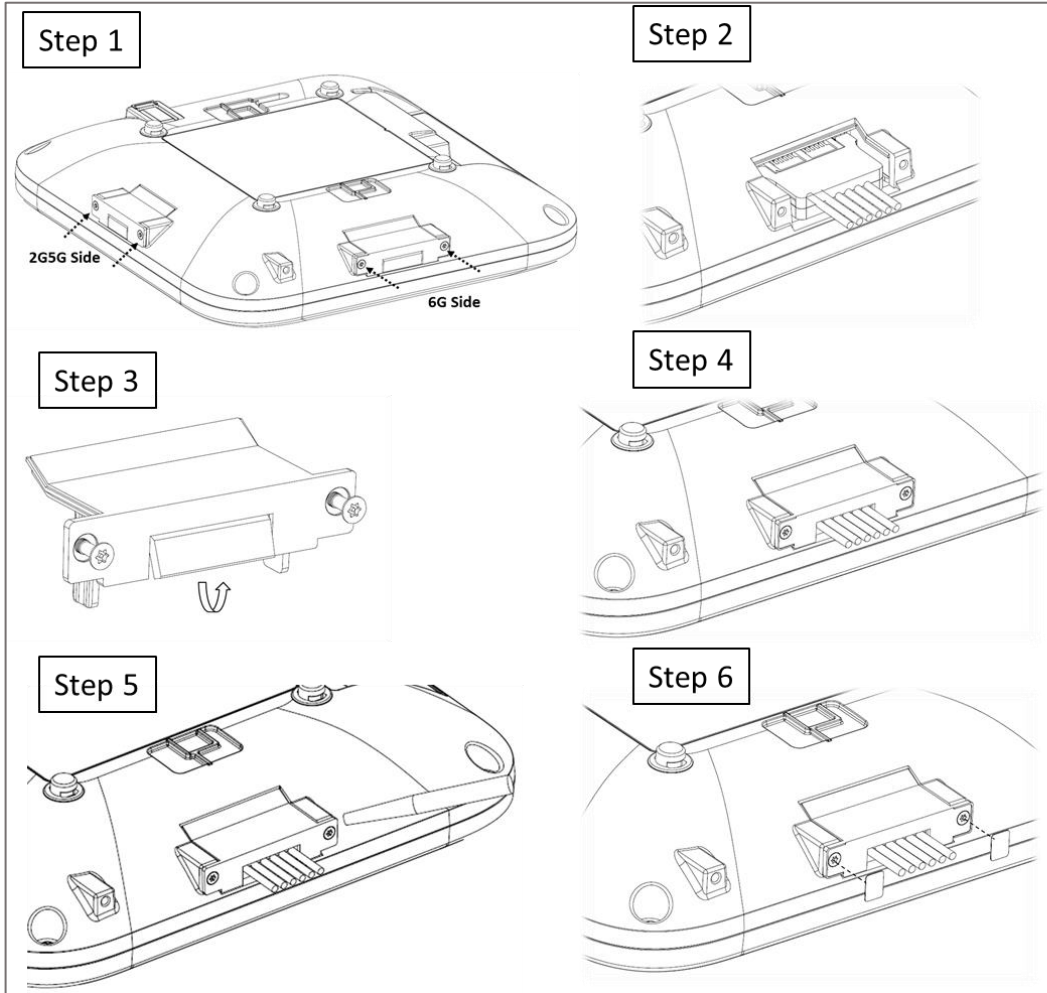
The Mist AP45 contains four IEEE 802.11ax radios that deliver 4x4 MIMO with four spatial streams when operating in multi-user (MU) or single-user (SU) mode. The AP45 is capable of operating simultaneously in the 6GHz band, 5GHz band, and 2.4GHz band along with a dedicated tri-band scan radio.

## I/O ports



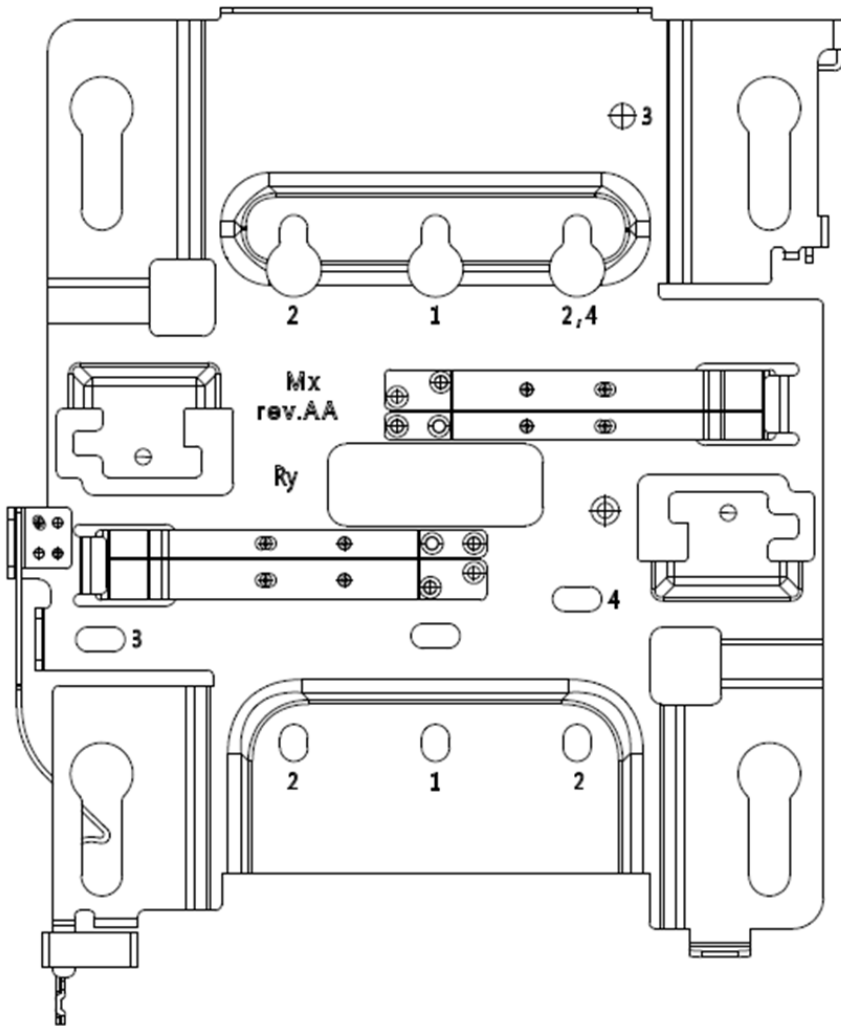
Reset	Reset to the factory default settings
Eth0+PoE-in	100/1000/2500/5000BASE-T RJ45 interface that supports 802.3at/802.3bt PoE PD
Eth1+PSE-out	10/100/1000BASE-T RJ45 interface + 802.3af PSE (if PoE-in is 802.3bt)
USB	USB2.0 support interface

# AP45E Antenna attachment



- Step 1**  
Unscrew the antenna port covers using a T8 security torx bit.
- Step 2**  
Connect antenna to the AP
- Step 3**  
Bend the breakoff tab on the covers.
- Step 4**  
Attach the antenna port cover on the AP using a T8 security torx bit
- Step 5**  
Put a few drops of the provided glue on the 6-pin port cover screws
- Step 6**  
Place the provided lexan labels on the port cover screws with the glue

# APBR-U Mounting box options



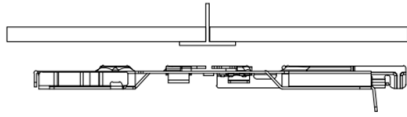
Holes	Mounting options
1	US Single gang, 4 inch round, 3.5 inch round
2	US Double gang, Wall/ceiling mount
3	US 4 inch square
4	EU junction box

In a wall mount installation, please use screws that have a 1/4in. (6.3mm) diameter head with a length at least 2 in. (50.8mm).

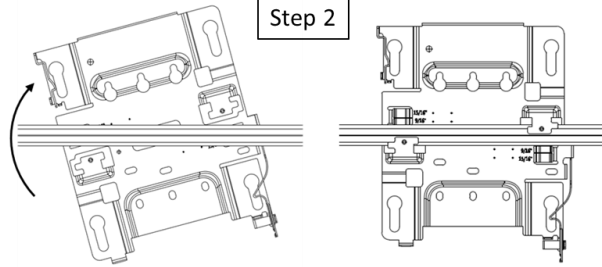
APBR-U that is in the AP45(E) box includes a set screw and an eyehook.

# Mounting to a 9/16 inch or 15/16 inch T-bar

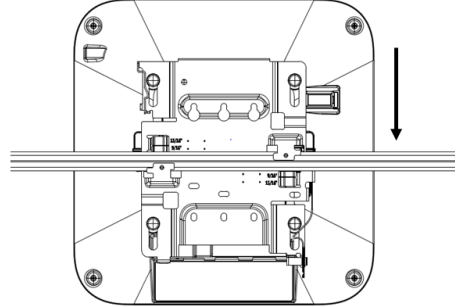
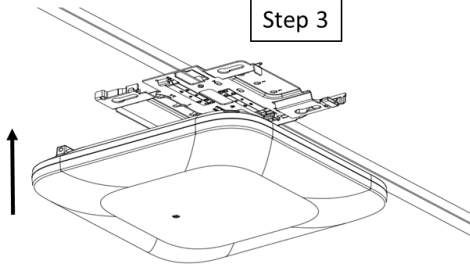
Step 1



Step 2



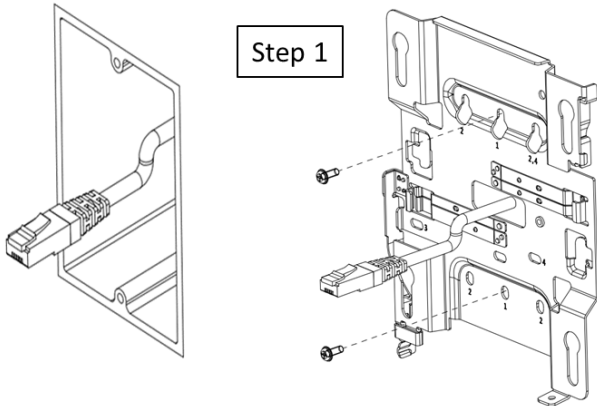
Step 3



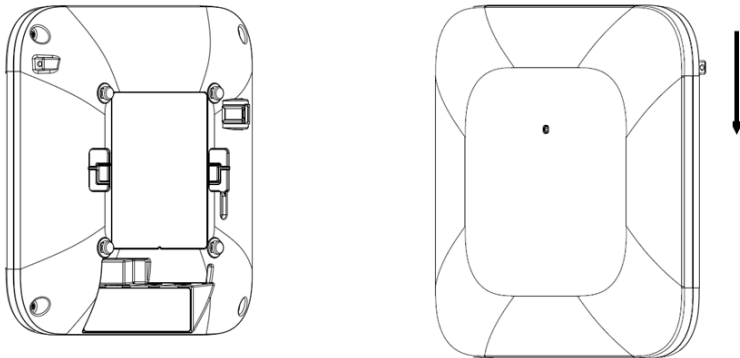
Step1.  
Mount APBR-U to the t-bar  
Step2.  
Rotate APBR-U to lock to the t-bar  
Step3.  
Slide the AP with shoulder screws on the APBR-U until the lock is engaged

# US single gang, 3.5 or 4 inch round junction box

Step 1

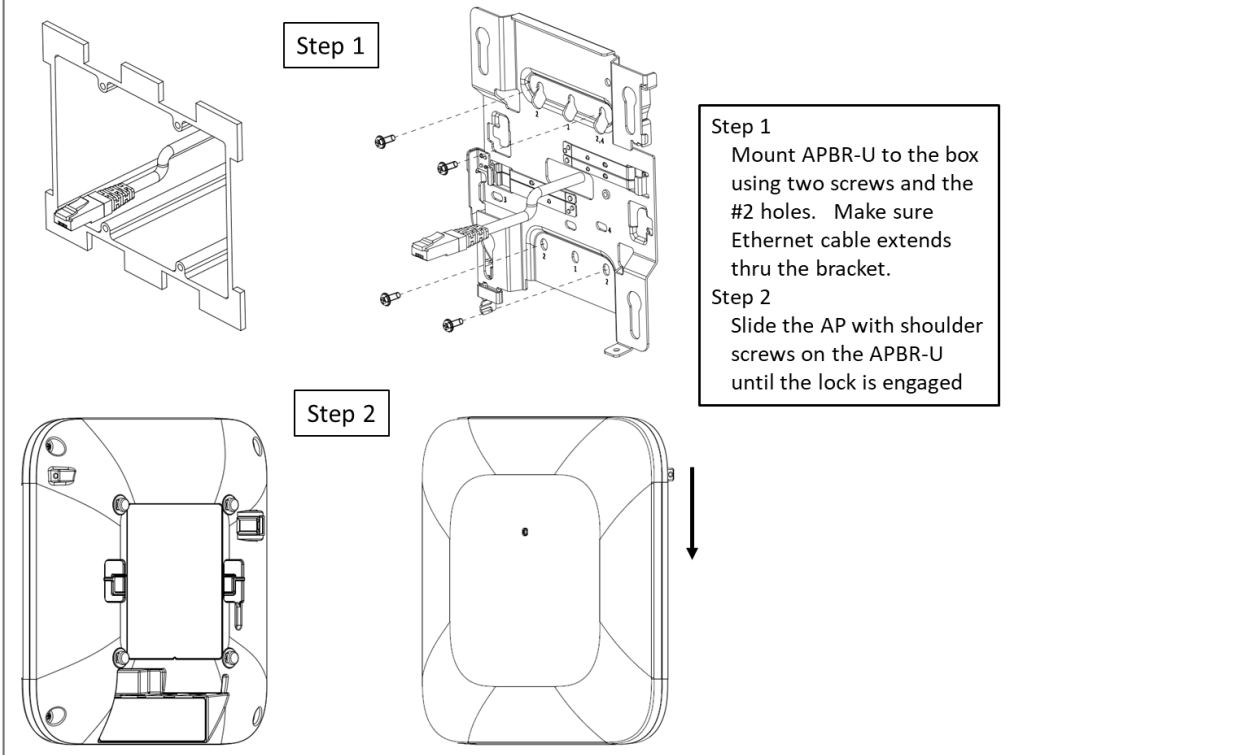


Step 2

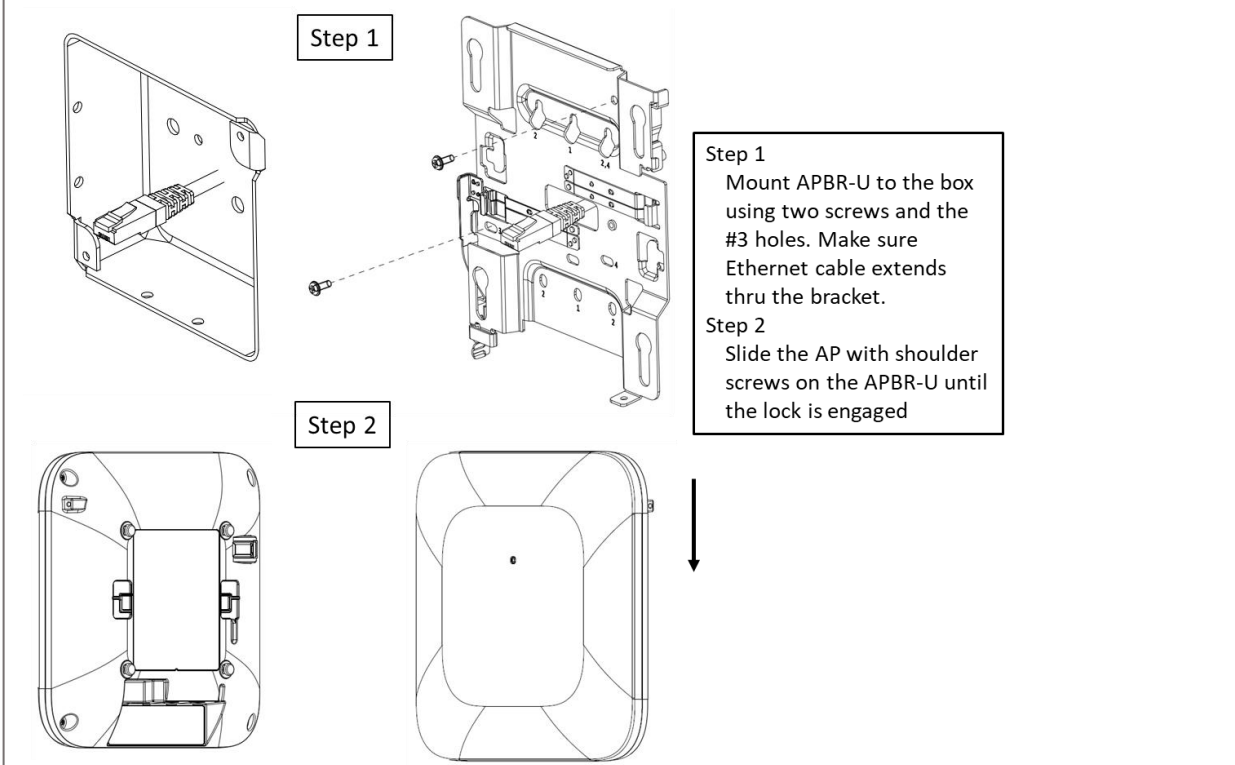


Step 1  
Mount APBR-U to the box using two screws and the #1 holes. Make sure Ethernet cable extends thru the bracket.  
Step 2  
Slide the AP with shoulder screws on the APBR-U until the lock is engaged

## US double gang junction box

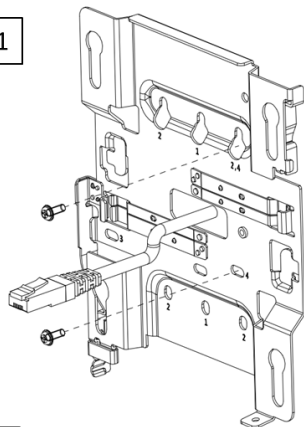


## US 4 inch square junction box



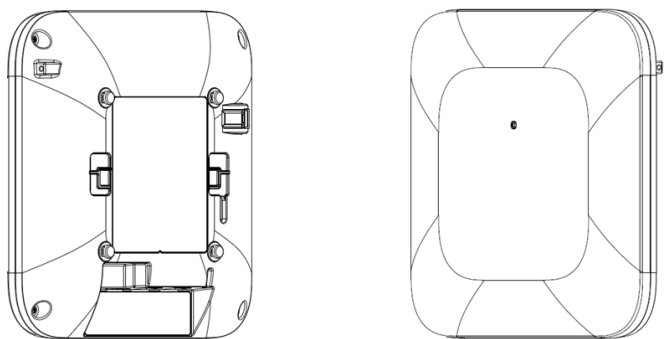
# EU junction box

Step 1

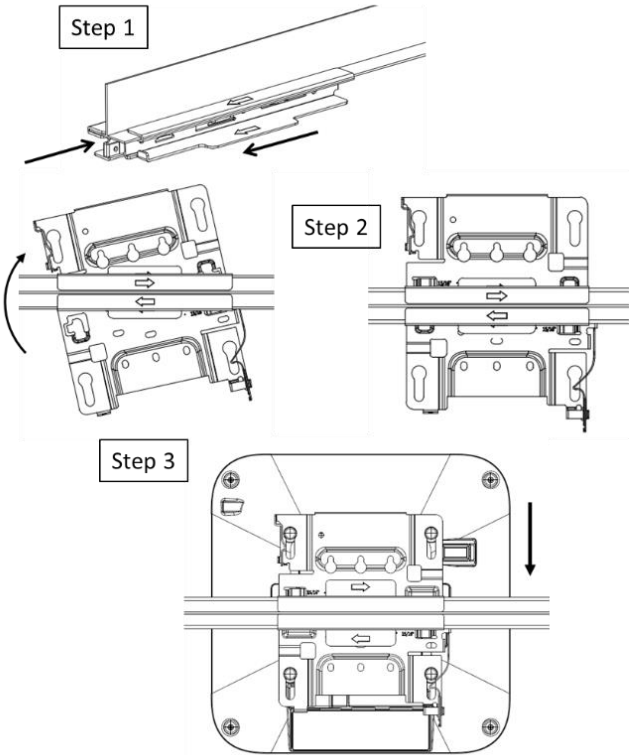


Step 1  
Mount APBR-U to the box using two screws and the #4 holes. Make sure Ethernet cable extends thru the bracket.  
Step 2  
Slide the AP with shoulder screws on the APBR-U until the lock is engaged

Step 2

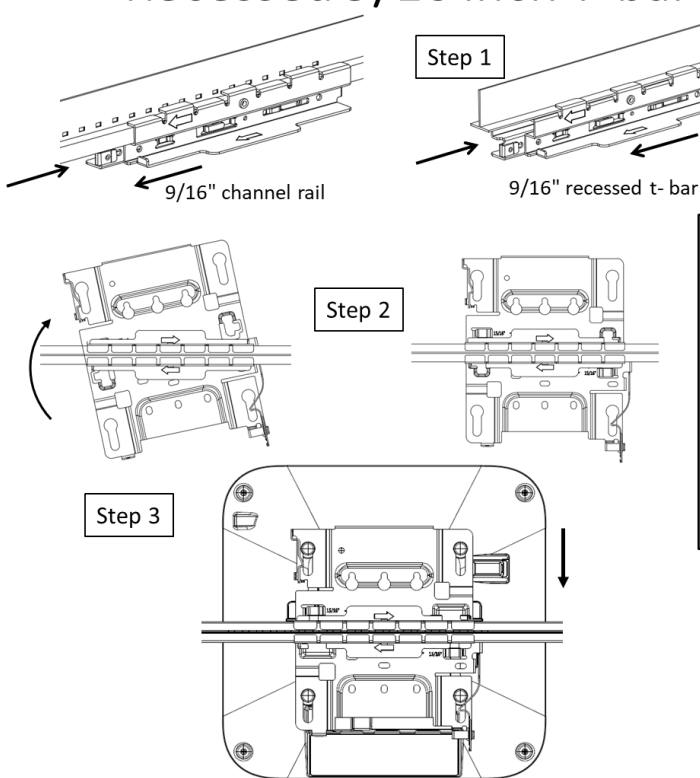


## Recessed 15/16 inch T-bar



- Step 1**  
Mount the APBR-ADP-RT15 to the t-bar
- Step 2**  
Mount the APBR-U to the APBR-ADP-RT15. Rotate the APBR-U to lock to the APBR-ADP-RT15
- Step 3**  
Slide the AP with shoulder screws on the APBR-U until the lock is engaged

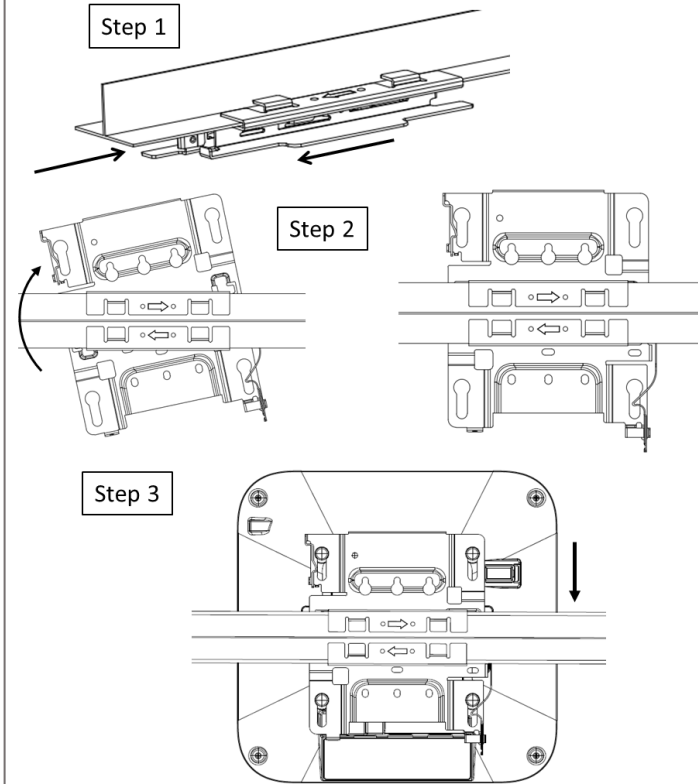
## Recessed 9/16 inch T-bar or channel rail



- Step 1**  
Mount the APBR-ADP-CR9 to the t-bar
- Step 2**  
Mount the APBR-U to the APBR-ADP-CR9. Rotate the APBR-U to lock to the APBR-ADP-CR9
- Step 3**  
Slide the AP with shoulder screws on the APBR-U until the lock is engaged

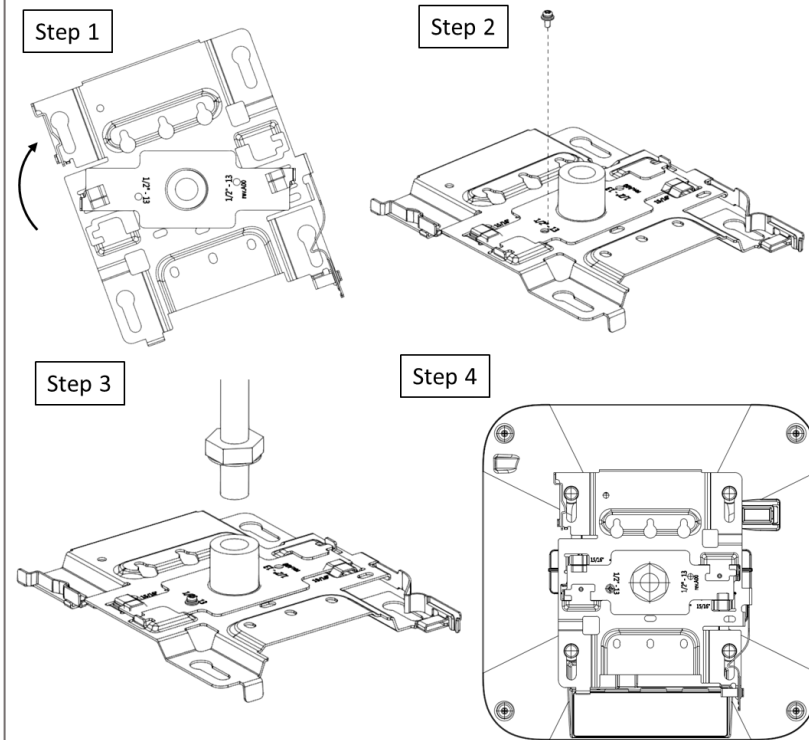


## 1.5 inch T-bar



- Step 1**  
Mount the APBR-ADP-WS15 to the t-bar
- Step 2**  
Mount the APBR-U to the APBR-ADP-WS15. Rotate the APBR-U to lock to the APBR-ADP-WS15
- Step 3**  
Slide the AP with shoulder screws on the APBR-U until the lock is engaged

## Threaded rod adapter (1/2", 5/8", or M16)



- Step 1**  
Install the APBR-ADP-T12 to the APBR-U. Rotate to lock.
- Step 2**  
Secure the APBR-ADP-T12 to the APBR-U with the provided screw
- Step 3**  
Install the bracket assembly to the 1/2" threaded rod and secure with the provided lock washer and nut.
- Step 4**  
Slide the AP with shoulder screws on the APBR-U until the lock is engaged
- The same instructions work for the APBR-ADP-T58 or APBR-ADP-M16

The threaded rod adapter attaches to a rod that is either 1/2"-13, 5/8"-11, or M16-2.

## Technical Specifications:

Feature	Description
Power options	802.3at/802.3bt PoE
Dimensions	230mm x 230mm x 50mm (9.06in x 9.06in x 1.97in)
Weight	AP45: 1.34 kg (2.95 lbs) AP45E: 1.30 kg (2.86 lbs)
Operating temperature	AP45: 0° to 40° C AP45E: -10° to 50° C
Operating humidity	10% to 90% maximum relative humidity, non-condensing
Operating altitude	3,048m (10,000 ft)
Electromagnetic emissions	FCC Part 15 Class B
I/O	1 – 100/1000/2500/5000BASE-T auto-sensing RJ-45 with PoE 1 – 10/100/1000BASE-T auto-sensing RJ-45 USB2.0
RF	2.4GHz or 5GHz - 4x4:4SS 802.11ax MU-MIMO & SU-MIMO 5GHz - 4x4:4SS 802.11ax MU-MIMO & SU-MIMO 6GHz – 4x4: 4SS 802.11ax MU-MIMO & SU-MIMO 2.4GHz / 5GHz /6GHz scanning radio 2.4GHz BLE with Dynamic Antenna Array
Maximum PHY rate	Total maximum PHY rate – 9600 Mbps 6GHz – 4800 Mbps 5GHz – 2400 Mbps 2.4GHz or 5GHz – 1148 Mbps or 2400Mbps
Indicators	Multi-color status LED
Safety standards	UL 62368-1 CAN/CSA-C22.2 No. 62368-1-14 UL 2043 ICES-003:2020 Issue 7, Class B (Canada)

Suitable for use in environmental air space in accordance with Section 300-22(C) of the National Electrical Code, and Sections 2-128, 12-010(3), and 12-100 of the Canadian Electrical Code, Part 1, CSA C22.1.

## Warranty Information

The AP45 family of Access Points comes with a limited lifetime warranty.

### Ordering Information:

#### Access Points

AP45-US	802.11ax 6E 4+4+4 – Internal Antenna for the US Regulatory domain
AP45E-US	802.11ax 6E 4+4+4 – External Antenna for the US Regulatory domain
AP45-WW	802.11ax 6E 4+4+4 – Internal Antenna for the WW Regulatory domain
AP45E-WW	802.11ax 6E 4+4+4 – External Antenna for the WW Regulatory domain

#### Mounting brackets

APBR-U	Universal AP Bracket for T-Rail and Drywall mounting for Indoor Access Points
APBR-ADP-T58	Adapter for 5/8-inch threaded rod bracket
APBR-ADP-M16	Adapter for 16mm threaded rod bracket
APBR-ADP-T12	Adapter for 1/2-inch threaded rod bracket
APBR-ADP-CR9	Adapter for channel rail and recessed 9/16" t-rail
APBR-ADP-RT15	Adapter for recessed 15/16" t-rail
APBR-ADP-WS15	Adapter for recessed 1.5" t-rail

#### Power Supply options

802.3at or 802.3bt PoE power

## **Regulatory Compliance Information:**

This product and all interconnected equipment must be installed indoors within the same building, including the associated LAN connections as defined by the 802.3at Standard.

Operations in the 5.15GHz – 5.35GHz band are restricted to indoor usage only.

If you need further assistance with purchasing the power source, please contact Juniper Networks, Inc.

# FCC Requirement for Operation in the United States of America:

FCC Part 15.247, 15.407, 15.107, and 15.109

## FCC Guideline for Human Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance between the radiator & your body; AP45 – 50cm and AP45E – 59cm.

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.

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 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.

## FCC Caution

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- For operation within 5.15 ~ 5.25GHz / 5.47 ~ 5.725GHz / 5.925 ~ 7.125GHz frequency range, it is restricted to indoor environment.
- The 5.925 ~ 7.125GHz operation of this device is prohibited on oil platforms, cars, trains, boats, and aircraft, except that operation of this device is permitted in large aircraft while flying above 10,000 feet.

- Operation of transmitters in the 5.925-7.125 GHz band is prohibited for control of or Communications with unmanned aircraft systems.

## Industry Canada

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). 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.

Cet appareil contient des émetteurs / récepteurs exempts de licence qui sont conformes au (x) RSS (s) exemptés de licence d'Innovation, Sciences et Développement économique Canada. L'opération est soumise aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

This radio transmitter [22068-AP45] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Le présent émetteur radio (22068-AP45) a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal d'antenne. Les types d'antennes non inclus dans cette liste qui ont un gain supérieur au gain maximal indiqué pour tout type listé sont strictement interdits pour une utilisation avec cet appareil.

Approved antenna(s) list:

Antenna	Brand Name	Model Name	Antenna Type	Equip EUT	Gain (dBi)
1	Juniper	AP45	PIFA	AP45	Note1
2	Juniper	AP45	PIFA		
3	Juniper	AP45	PIFA		
4	Juniper	AP45	PIFA		
5	Juniper	AP45	PIFA		
6	Juniper	AP45	PIFA		
7	Juniper	AP45	PIFA		
8	Juniper	AP45	PIFA		
9	Juniper	AP45	PIFA		
10	Juniper	AP45	PIFA		
11	Juniper	AP45	PIFA		
12	Juniper	AP45	PIFA		
13	Juniper	AP45	PIFA		
14	Juniper	AP45	PIFA		
15	Juniper	AP45	PIFA	AP45, AP45E	
16	AccelTex	ATS-OO-2456-466-10MC-36	OMNI	AP45E	
17	AccelTex	ATS-OP-2456-81010-10MC-36	Panel		
18	AccelTex	ATS-OO-2456-466-10MC-36	OMNI		
19	AccelTex	ATS-OP-2456-81010-10MC-36	Panel		



## Note 1:

Ant.	Antenna Gain (dBi)																						
	WLAN 5GHz (Radio 1)				WLAN 2.4GHz (Radio 2)	WLAN 5GHz (Radio 2)				WLAN 6GHz (Radio 3)				WLAN 2.4GHz (Radio 4)	WLAN 5GHz (Radio 4)				WLAN 6GHz (Radio 4)				Bluetooth (Radio 5)
	UNII 1	UNII 2A	UNII 2C	UNII 3		UNII 1	UNII 2A	UNII 5	UNII 6	UNII 7	UNII 8		UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 5	UNII 6	UNII 7	UNII 8			
1	2.89	3.7	3.46	2.39	2.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
2	2.61	2.55	3.04	3.8	0.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
3	1.94	2.2	2.82	2.54	2.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
4	3.27	4.06	2.87	2.17	1.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
5	-	-	-	-	-	3.2	3.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
6	-	-	-	-	-	2.85	3.77	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
7	-	-	-	-	-	3.37	3.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
8	-	-	-	-	-	3.11	3.68	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
9	-	-	-	-	-	-	-	4.9	5.4	5.4	5.6	-	-	-	-	-	-	-	-	-	-		
10	-	-	-	-	-	-	-	4.9	5.4	5.4	5.6	-	-	-	-	-	-	-	-	-	-		
11	-	-	-	-	-	-	-	4.9	5.4	5.4	5.6	-	-	-	-	-	-	-	-	-	-		
12	-	-	-	-	-	-	-	4.9	5.4	5.4	5.6	-	-	-	-	-	-	-	-	-	-		
13	-	-	-	-	-	-	-	-	-	-	-	5.0	5.4	5.4	5.5	5.3	4.7	4.8	4.8	4.1	-		
14	-	-	-	-	-	-	-	-	-	-	-	5.0	5.4	5.4	5.5	5.3	4.7	4.8	4.8	4.1	-		
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.5		
16	6	6	6	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
17	10	10	10	10	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
18	-	-	-	-	-	-	-	6	6	6	6	4	6	6	6	6	6	6	6	6	-		
19	-	-	-	-	-	-	-	10	10	10	10	8	10	10	10	10	10	10	10	10	-		

## IC Caution

- (i) The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
- (ii) The maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit;
- (iii) The maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate; and
- (iv) Operation shall be limited to indoor use only.
- (v) Operation on oil platforms, cars, trains, boats and aircraft shall be prohibited except for on large aircraft flying above 10,000 ft.

## Avertissement

- (i) les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;
- (ii) le gain maximal d'antenne permis pour les dispositifs utilisant les bandes de 5250 à 5350 MHz et de 5470 à 5725 MHz doit être conforme à la limite de la p.i.r.e.;
- (iii) le gain maximal d'antenne permis (pour les dispositifs utilisant la bande de 5725 à 5850 MHz) doit être conforme à la limite de la p.i.r.e. spécifiée pour l'exploitation point à point et l'exploitation non point à point, selon le cas;
- (iv) Utilisation limitée à l'intérieur seulement.
- (v) Utilisation interdite à bord de plateformes de forage pétrolier, de voitures, de trains, de bateaux et d'aéronefs, sauf à bord d'un gros aéronef volant à plus de 10 000 pieds d'altitude.

## **Radiation Exposure Statement:**

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 24cm (AP45), 34cm (AP45E) between the radiator & your body.

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 24cm (AP45), 34cm (AP45E) de distance entre la source de rayonnement et votre corps.



Hereby, Juniper Networks, Inc. declares that the radio equipment types (AP45, AP45E) are in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following:

<https://www.mist.com/support/>

The frequency and maximum transmitted Power in EU:

Bluetooth:


Frequency range (MHz)	Maximum EIRP in EU (dBm)
2400 – 2483.5	9.77

WLAN:

Frequency range (MHz)	Maximum EIRP in EU (dBm)
2400 – 2483.5	19.99
5150 – 5250	22.99
5250 – 5350	22.99
5500 – 5700	29.98
5745 – 5825	13.97
5945 – 6425	22.99

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

The device is restricted to indoor use only when operating in 5150 to 5350 MHz and 5945 to 6425MHz frequency ranges.

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

## UK

Hereby, Juniper Networks, Inc. declares that the radio equipment types (AP45, AP45E) are in compliance with Radio Equipment Regulations 2017.

The full text of the UK declaration of conformity is available at the following:

<https://www.mist.com/support/>

The frequency and maximum transmitted Power in UK:

### Bluetooth:

Frequency range (MHz)	Maximum EIRP in UK (dBm)
2400 – 2483.5	9.77

### WLAN:

Frequency range (MHz)	Maximum EIRP in UK (dBm)
2400 – 2483.5	19.99
5150 – 5250	22.99
5250 – 5350	22.99
5500 – 5700	29.98
5745 – 5825	22.98
5925 – 6425	22.99

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

The device is restricted to indoor use only when operating in 5150 to 5350 MHz and 5925 to 6425MHz frequency ranges.

