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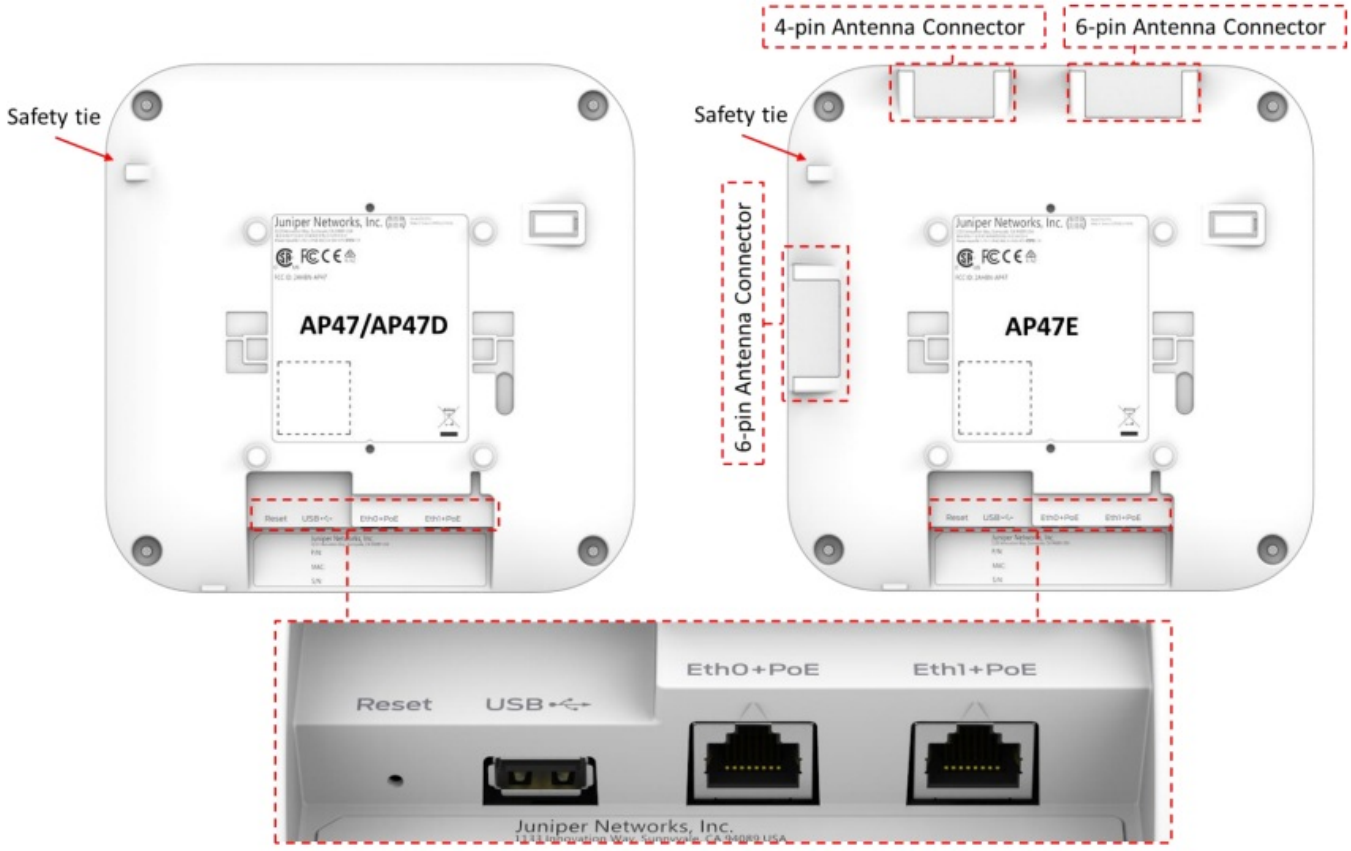
Juniper NETWORKS AP47 Access Point

Overview

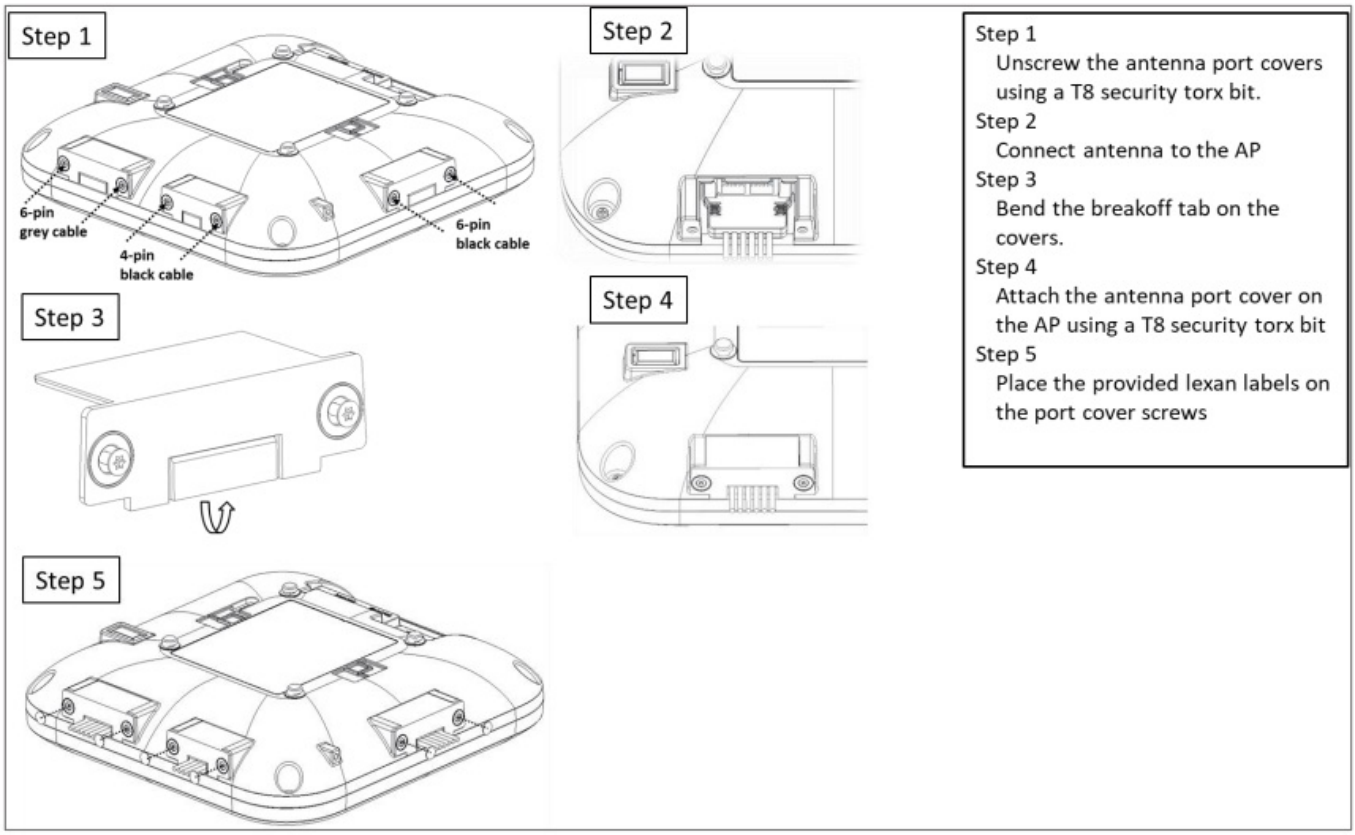
The AP47 contains four IEEE 802.11be radios that deliver 4×4 MIMO with four spatial streams when operating in multi-user (MU) or single-user (SU) mode. The AP47 is capable of operating simultaneously in the 6GHz band, 5GHz band, and 2.4GHz band along with a dedicated tri-band scan radio.

I/O ports



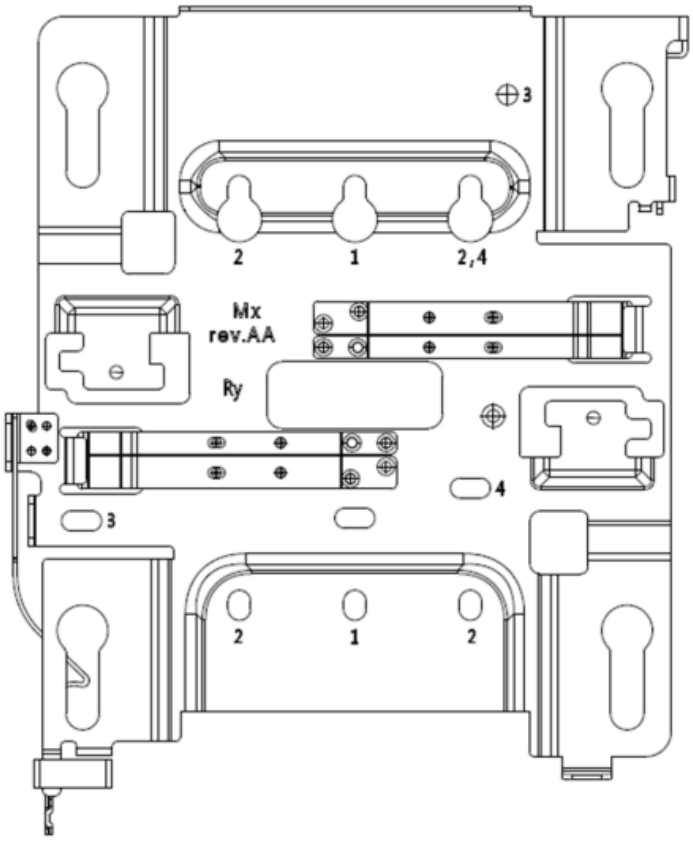
Reset	Reset to the factory default settings
Eth0+PoE-in	100/1000/2500/5000/10000BASE-T RJ45 interface that supports 802.3at/802.3bt PoE PD with MACsec support
Eth1+PoE-in	100/1000/2500/5000/10000BASE-T RJ45 interface that supports 802.3at/802.3bt PoE PD
USB	USB2.0 support interface

Antenna attachment



Mounting

APBR-U Mounting box options

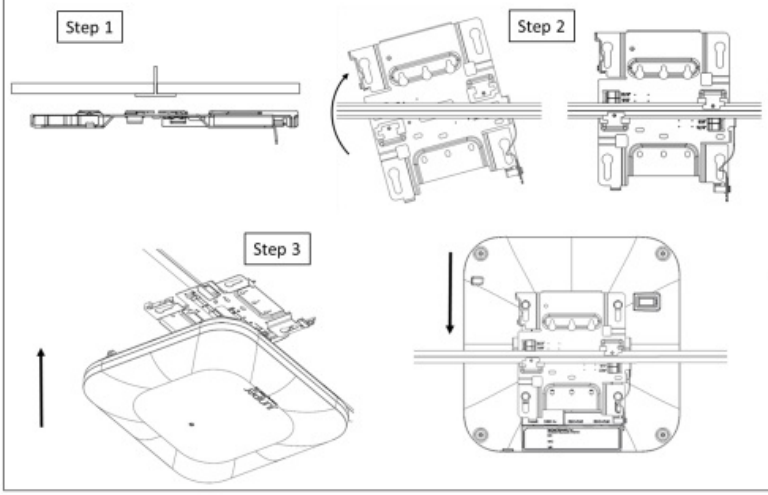


Holes	Mounting options
1	US Single gang, 4 inch round, 3.5 inch round
2	US Double gang, Wall/ceiling mount
3	US 4 inch square
4	EU junction box

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).

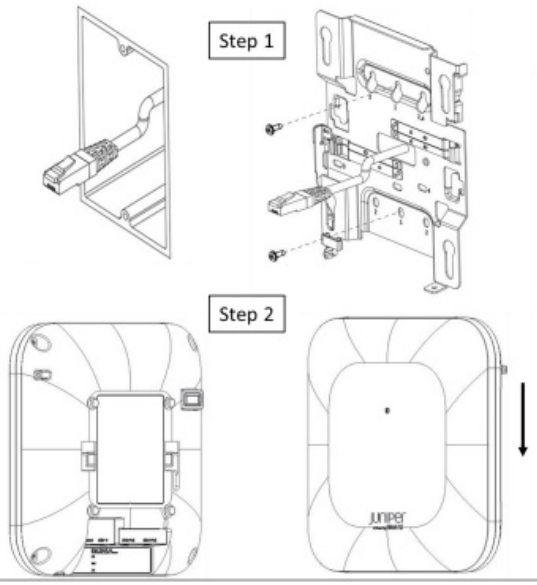
APBR-U that is in the AP47, AP47D, or AP47E box includes a set screw and an eyehook.

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



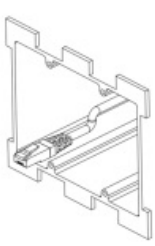
Step1.
Mount APBR-U to the t-bar
Step2.
Rotate APBR-U to lock to the t-bar
Step3.
Slide the AP feet on the APBR-U until the lock is engaged

US single gang, 3.5 or 4 inch round junction box

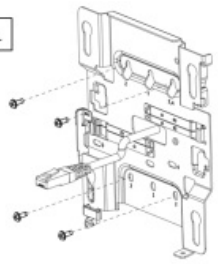


Step 1
Mount APBR-U to the box using two screws and the #1 holes. Make sure Ethernet cable extends thru the bracket.
Step 2
Slide the AP feet on the APBR-U until the lock is engaged

US double gang junction box

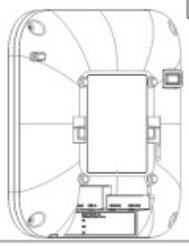


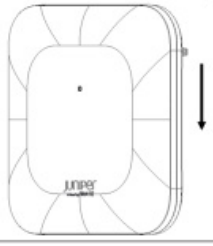
Step 1



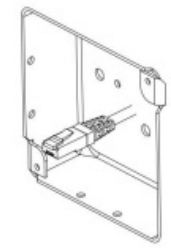
Step 1
Mount APBR-U to the box using two screws and the #2 holes. Make sure Ethernet cable extends thru the bracket.
Step 2
Slide the AP feet on the APBR-U until the lock is engaged

Step 2

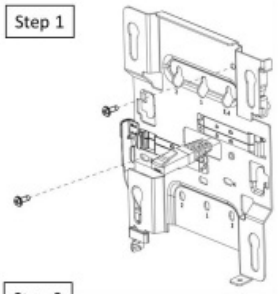




US 4 inch square junction box

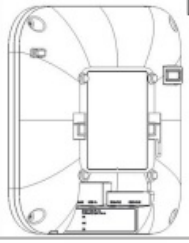


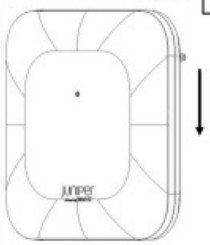
Step 1



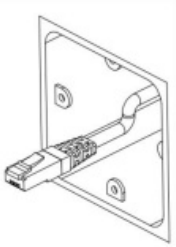
Step 1
Mount APBR-U to the box using two screws and the #3 holes. Make sure Ethernet cable extends thru the bracket.
Step 2
Slide the AP feet on the APBR-U until the lock is engaged

Step 2

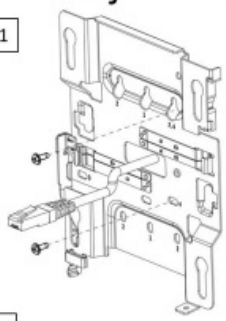




EU junction box

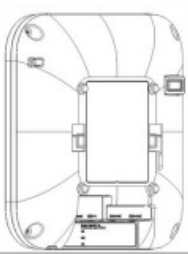


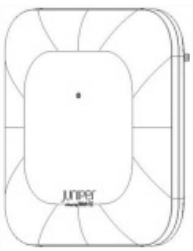
Step 1



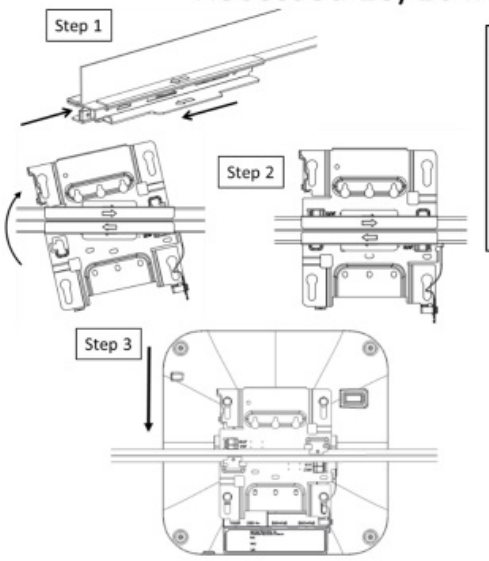
Step 1
Mount APBR-U to the box using two screws and the #4 holes. Make sure Ethernet cable extends thru the bracket.
Step 2
Slide the AP feet on the APBR-U until the lock is engaged

Step 2



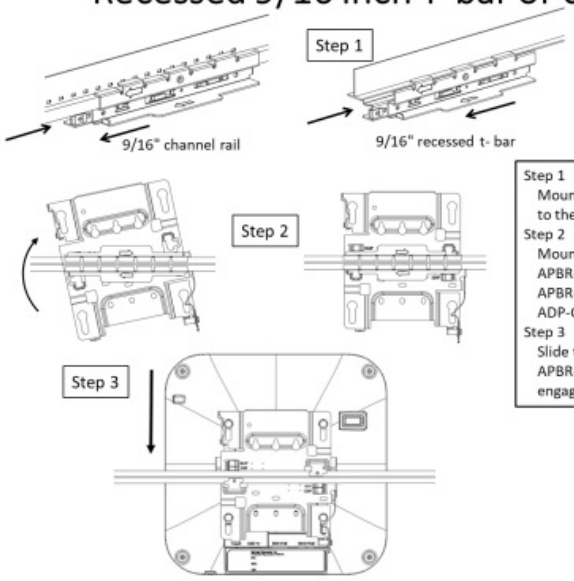


Recessed 15/16 inch T-bar

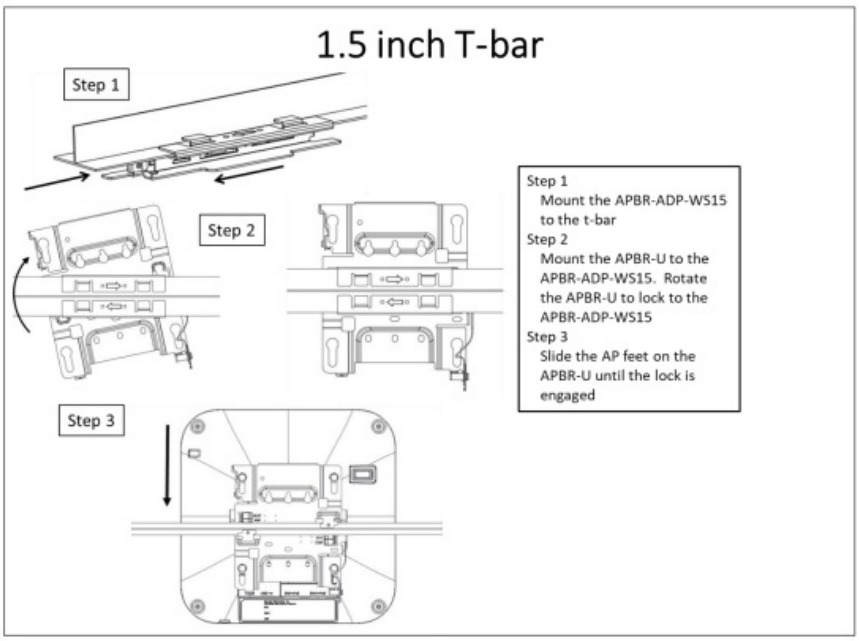


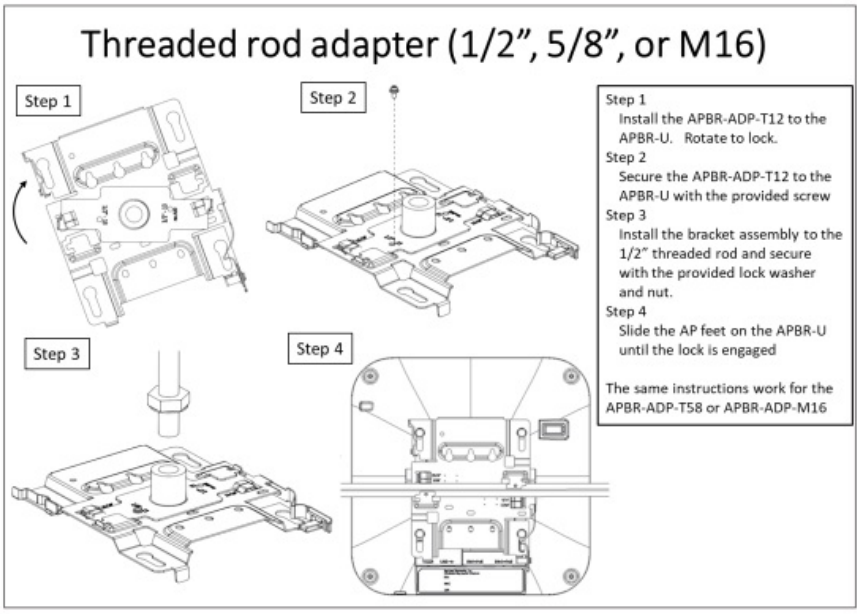
Step 1
Mount the APBR-ADP-RT15 to the t-bar
Step 2
Mount the APBR-U to the APBR-ADP-RT15. Rotate the APBR-U to lock to the APBR-ADP-RT15
Step 3
Slide the AP feet on the APBR-U until the lock is engaged

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 feet on the APBR-U until the lock is engaged





Technical Specifications

Feature	Description
Power options	802.3at/802.3bt PoE
Dimensions	AP47: 254mm x 254mm x 60mm (10.00in x 10.00in x 2.36in) AP47D: 254mm x 254mm x 66mm (10.00in x 10.00in x 2.60in) AP47E: 254mm x 254mm x 60mm (10.00in x 10.00in x 2.36in)

Weight	AP47: 2.00 kg (4.41 lbs) AP47D: 2.06 kg (4.54 lbs) AP47E: 1.90 kg (4.18 lbs)
Operating temperature	AP47: 0° to 40° C AP47D: 0° to 40° C AP47E: -20° 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 – 100/1000/2500/5000/10000BASE-T auto-sensing RJ-45 with PoE and MACsec 1 – 100/1000/2500/5000/10000BASE-T auto-sensing RJ-45 with PoE USB2.0

RF	2.4GHz or 5GHz or 6GHz – 4×4:4SS 802.11be MU-MIMO & SU-MIMO 5GHz – 4×4:4SS 802.11be MU-MIMO & SU-MIMO 6GHz – 4×4: 4SS 802.11be MU-MIMO & SU-MIMO 2.4GHz / 5GHz /6GHz scanning radio 2.4GHz BLE with Dynamic Antenna Array 802.15.4: dual radio GNSS: L1 & L5 UWB
Maximum PHY rate	Total maximum PHY rate – 28.82 Gbps 6GHz – 11.53 Gbps 5GHz – 5.76 Gbps 2.4GHz or 5GHz or 6GHz – 1.38 Gbps or 5.76 Gbps or 11.53 Gbps
Indicators	Multi-color status LED
Safety standards	UL 62368-1 (Third Edition) CAN/CSA-C22.2 No. 62368-1:19+Upd 1 (Third Edition) UL 2043 ICES-003:2020 Issue 7, Class B (Canada)

Warranty Information

The AP47 family of Access Points comes with a limited lifetime warranty.

Ordering Information:

Access Points

AP47-US	802.11be WiFi7 4+4+4 – Internal Antenna for the US Regulatory domain
AP47D-US	802.11be WiFi7 4+4+4 – Internal Directional Antenna for the US Regulatory domain
AP47E-US	802.11be WiFi7 4+4+4 – External Antenna for the US Regulatory domain
AP47-WW	802.11be WiFi7 4+4+4 – Internal Antenna for the WW Regulatory domain
AP47D-WW	802.11be WiFi7 4+4+4 – Internal Directional Antenna for the WW Regulatory domain
AP47E-WW	802.11be WiFi7 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; AP47 – 58cm, AP47D – 62cm, and AP47E – 62cm. 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.
- Ultra-Wideband – This equipment may only be operated indoors. Operation outdoors is in violation of 47 U.S.C. 301 and could subject the operator to serious legal penalties.

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.
This radio transmitter [22068-AP47] 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.

Approved antenna(s) list:

Ant.	RF Port	Brand Name	Model Name	Ant. Type	Connector	Gain (dBi)	Modes of Operation
1	1	Accel Tex	ATS-OP-2456-81010- 14MPC-36	Patch	6MPC-WHT		WLAN 2.4GHz, WLAN 5GHz (UNII 1-2A), WLAN 6GHz (UNII 7) (Radio 3)
	2						
	3						
	4						
	1	Accel Tex	ATS-OP-2456-81010- 14MPC-36	Patch	4MPC		WLAN 5GHz (UNII 1-2A or 2C-3) (Radio 2)
	2						
	3						
	4						
	1	Accel Tex	ATS-OP-2456-81010- 14MPC-36	Patch	6MPC-BLK		WLAN 6GHz (UNII 5 or UNII 7) (Radio 1)
	2						
	3						
	4						
	1	Accel Tex	ATS-OP-2456-81010- 14MPC-36	Patch	6MPC-BLK		WLAN 2.4GHz, WLAN 5GHz (UNII 1-3), WLAN 6GHz (UNII 5, 7) (Radio 4) (Scanning radio)
	2						

2	1	Juniper	AP47E	PIFA	I-PEX	Note 1	Bluetooth (Radio 5)
3	1	Juniper	AP47E	Slot	I-PEX		
4	1	Juniper	AP47E	PIFA	I-PEX		802.15.4(Zigbee, Thread) (Radio 5)
5	1	Juniper	AP47E	PIFA	IPEX	4.7	UWB (Radio 6)
6	2	Juniper	AP47E	Patch	IPEX	1.4	
	3					2.1	
	4					1.7	
7	1	Juniper	AP47E	PIFA	IPEX	3.3	GPS (Radio 7)

Note 1:

	Antenna Gain (dBi)			
Ant.	**RF Port**	**WLAN 2.4GHz (Radio 3)**	**WLAN 5GHz (UNII 1-2A) (Radio 3)**	**WLAN 6GHz (UNII 7) (Radio 3)**
	1	8.46	10.01	10

1	2	8.46	10.01	10
	3	8.46	10.01	10
	4	8.46	10.01	10
Ant.	**RF Port**	**WLAN 5GHz (UNII 1-3) (Radio 2)**		
1	1	9.93		
	2	9.93		
	3	9.93		
	4	9.93		
Ant.	**RF Port**	**WLAN 6GHz (UNII 5 or UNII 7) (Radio 1)**		
1	1	10.57		
	2	10.57		
	3	10.57		
	4	10.57		
	RF Port	**WLAN 2.4GHz/5GHz (UNII 1-3)/WLAN 6GHz (UNII 5, 7) (Radio 4 Scanning radio)**		
		WLAN 2.4GHz	**WLAN 5GHz**	**WLAN 6GHz**

	1	7.8	9.5	10
	2	7.8	9.5	10
Ant.	**Bluetooth (Radio 5)**			
	Bluetooth array (Beam1-8/Omni)		**Bluetooth array (Beam9)**	
2	4.0		–	
3	–		2.8	
Ant.	**802.15.4(Zigbee, Thread) (Radio 5)**			
4	4.1			

IC Caution

1. 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;
2. 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;
3. 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
4. Operation shall be limited to indoor use only.
5. Devices shall not be used for control of or communications with unmanned aircraft systems.
6. Devices shall not be used on oil platforms.
7. Devices shall not be used on aircraft, except for the low-power indoor access points, indoor subordinate devices, low-power client devices, and very low-power devices operating in the 5925-6425 MHz band, that may be used on large aircraft as defined in

the Canadian Aviation Regulations, while flying above 3,048 metres (10,000 feet).

8. Devices shall not be used on automobiles.
9. Devices shall not be used on trains.
10. Devices shall not be used on maritime vessels.

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 30cm (AP47), 31cm (AP47D), 35cm (AP47E) between the radiator & your body.

CE

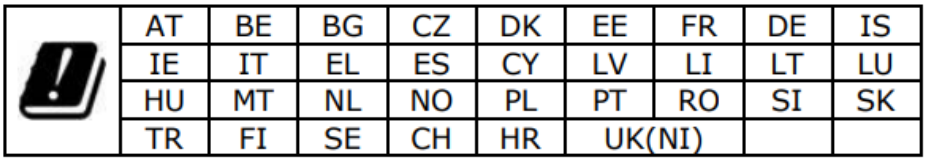
Hereby, Juniper Networks, Inc. declares that the radio equipment types (AP47, AP47D, AP47E) are in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the following:
https://www.mist.com/support/

The frequency and maximum transmitted Power in EU:

Evaluation Mode	Frequency range (MHz)	EIRP power limit (dBm)
2.4GHz WLAN	2400 – 2483.5	20
5GHz WLAN B1	5150 – 5250	23
5GHz WLAN B2	5250 – 5350	23
5GHz WLAN B3	5470 – 5725	30
5GHz WLAN B4 (EN 300 440 V2.2.1)	5725 – 5825	13.98
6GHz WLAN (EN 303 687)	5945 – 6425	LPI : 23
Bluetooth	2400 – 2483.5	20

IEEE 802.15.4 (Zigbee)	2400 – 2483.5	20
UWB (EN 302 064-2)	6000 – 8500	0 dBm/50MHz

- 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 product is for use by authorized professionals and in environments where the product has been assessed for safe and compliant operation. The installer is responsible for ensuring that the equipment meets all local safety requirements for the installed location.
- For products not certified for use in Hazardous Locations, the equipment is not suitable for use in explosive environments, in the presence of flammable liquids, near explosives, or in areas where blasting is occurring.
- The device is restricted to indoor use only when operating in 5150 to 5350 MHz and 5945 to 6425MHz frequency ranges.



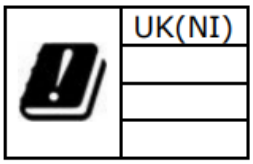
Hereby, Juniper Networks, Inc. declares that the radio equipment types (AP47, AP47D, AP47E) are in compliance with Radio Equipment Regulations 2017.
The full text of the UK declaration of conformity is available at the following:
https://www.mist.com/support/

The frequency and maximum transmitted Power in UK:

Evaluation Mode	Frequency range (MHz)	EIRP power limit (dBm)
2.4GHz WLAN	2400 – 2483.5	20
5GHz WLAN B1	5150 – 5250	23
5GHz WLAN B2	5250 – 5350	23

5GHz WLAN B3	5470 – 5725	30
5GHz WLAN B4 (EN 300 440 V2.2.1)	5725 – 5825	23
6GHz WLAN (EN 303 687)	5925 – 6425	LPI : 23.98
Bluetooth	2400 – 2483.5	20
IEEE 802.15.4 (Zigbee)	2400 – 2483.5	20
UWB (EN 302 064-2)	6000 – 8500	0 dBm/50MHz

- 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 product is for use by authorized professionals and in environments where the product has been assessed for safe and compliant operation. The installer is responsible for ensuring that the equipment meets all local safety requirements for the installed location.
- For products not certified for use in Hazardous Locations, the equipment is not suitable for use in explosive environments, in the presence of flammable liquids, near explosives, or in areas where blasting is occurring.
- The device is restricted to indoor use only when operating in 5150 to 5350 MHz and 5925 to 6425MHz frequency ranges.



AP47 Hardware Installation Guide

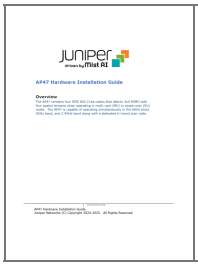
Frequently Asked Questions

- **Q: What is the warranty coverage for the AP47 Access Points?**

A: The AP47 family of Access Points comes with a limited lifetime warranty.

- **Q: What are the different models available for ordering?**
  A: The available models for ordering are AP47-US, AP47D-US, AP47E-US, AP47-WW, AP47D-WW, and AP47E-WW.

Documents / Resources

	Juniper NETWORKS AP47 Access Point [pdf] Installation Guide AP47, AP47 Access Point, Access Point, Point

References

- User Manual

JUNIPER NETWORKS

Access Point, AP47, AP47 Access Point, JUNIPER NETWORKS, Point

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