Bluesocket

2135 Access Point

Quick Start

March 2019
61700962F1-13F

P/N: 1700962F1

DESCRIPTION

The Bluesocket 2135 Access Point (BSAP) provides high performance, reliable coverage in ultra-high-density wireless environments.

HARDWARE

The following items are included in your shipment:

- Bluesocket 2135 Access Point (BSAP)
- One plane bracket with hardware
  - ♦ Four expansion bolts with washers and nuts
  - ♦ Four hex cap screws with washers and lock washers
- One pole mounting base with hardware
  - ♦ One hose strap
  - ♦ Four round head screws with washers and lock washers
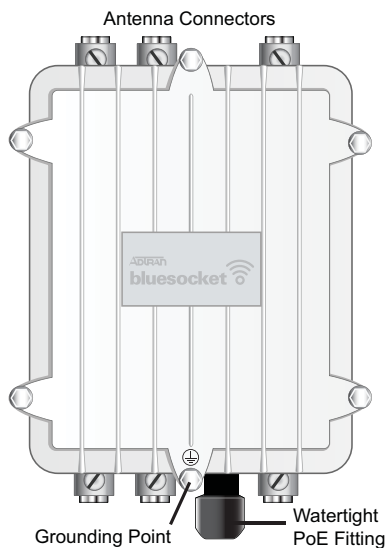- Watertight PoE fitting
- Grounding cable

Figure 1. Bluesocket 2135 Access Point

Antennas

The BSAP 2135 provides six N-type antenna connectors (no integrated antennas are included). These connectors support two internal 802.11 radios: one 2.4 GHz 802.11b/g/n radio and one 5 GHz 802 11a/n/ac radio. There are three antenna connectors for each band labeled **2.4GHz** and **5GHz**.

For a list of supported external antennas, applications, and instructions for maintaining regulatory compliance, refer to the *Bluesocket Compliance Notice* located online at https://supportforums.adtran.com.

ⓘ NOTE

Record the 12-character MAC address and 14-digit serial number listed on the back of the BSAP 2135 before mounting the AP to a wall or other surface. This information will be required during configuration.

INSTALLATION

Before installing the equipment, inspect the BSAP. If damage has occurred during shipping, file a claim with the carrier, and then contact ADTRAN Customer Support. For more information, refer to the warranty or to ADTRAN enhanced support for ProCare or ProCare NBD purchased upgrades.

Mounting the BSAP to an Exterior Ceiling or Wall

BSAPs can be mounted in exterior applications or interior applications, and in harsh environments with an operating temperature range of –40°F to 131°F (–40°C to 55°C). BSAPs should be positioned for maximum throughput and range between other APs and wireless client devices. Refer to Figure 2. Complete these instructions to mount the BSAP 2135 to a ceiling or wall:

1. On a flat mounting surface, mark the locations of the four mounting holes using the plane bracket as a template.
2. Drill an 8 mm diameter hole with a depth of 36 to 38 mm into each of the markings.
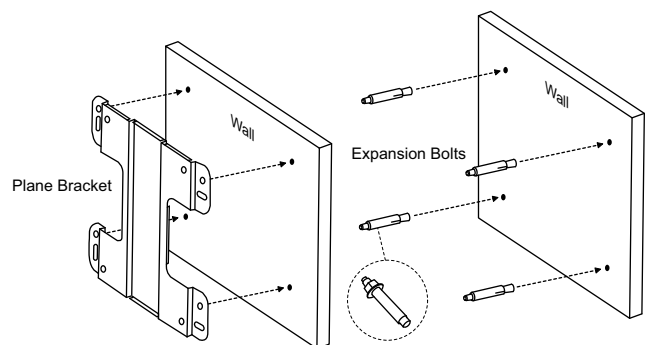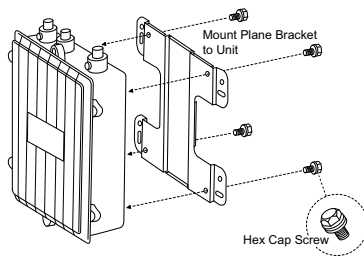3. Hammer the expanding bolts into each of the drilled holes.

Figure 2. Positioning the Wall Mounting Bracket

ADTRAN®

4. Place the lock washers, then the flat washers, on the four hex cap screws, and drive the screws through the plane bracket into the back of the case (inset).

Mount Plane Bracket to Unit
Hex Cap Screw

5. Install the antennas (sold separately) onto the appropriate antenna ports. The antenna ports are labeled **2.4GHz** and **5GHz**.

6. Mount the plain bracket on the expansion bolts extending from the mounting surface. Place the flat washers on the bolts, thread the nuts onto the bolts, and tighten to secure the bracket to the mounting surface (inset).

Mount Unit on Expansion Bolts
Expansion Bolt
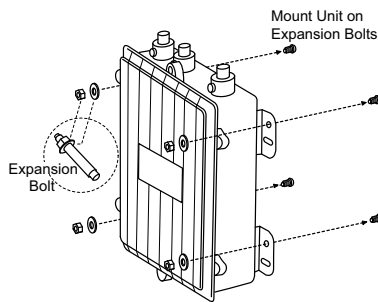
Mounting the BSAP to a Pole

The BSAP 2135 also ships with a pole mount base and hose strap to mount the AP to a vertical or horizontal pole. BSAPs should be positioned for maximum throughput and range between other APs and wireless client devices.

To mount the BSAP 2135 to a vertical pole:

1. Place the lock washers, then the flat washers on the four hex cap screws (refer to step 4, above), and insert the screws through the plane bracket into the back of the case.

2. Using the four round head screws with washers and lock washers, attach the pole mounting bracket to the plane bracket in a vertical position (Figure 3a).

3. Thread the open end of the hose strap through the two tabs on the pole mount base (Figure 3b).
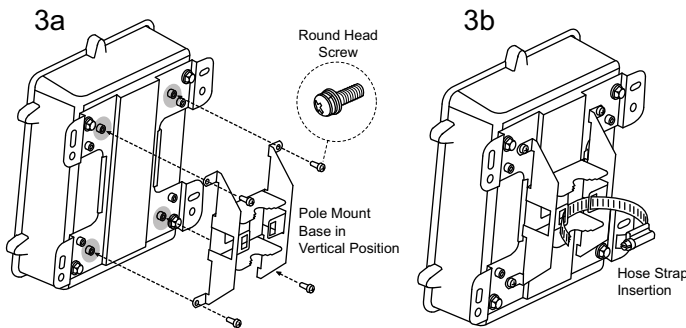

3a
Round Head Screw
Pole Mount Base in Vertical Position
3b
Hose Strap Insertion

Figure 3. Vertical Pole Mount

4. Install the antennas (sold separately) onto the appropriate antenna ports. The antenna ports are labeled **2.4GHz** and **5GHz**.

5. Wrap the hose strap around the vertical mounting pole and insert the end into the strap lock. Tighten the strap lock to secure the unit to the pole (Figure 5a).

Mounting the BSAP 2135 to a Horizontal Pole

1. Place the lock washers, then the flat washers, on the four hex cap screws, and insert the screws through the plane bracket into the back of the case as shown in step 4 of "Mounting the BSAP to an Exterior Ceiling or Wall".

2. Drive the four round head screws to attach the pole mount base to the plane bracket in a horizontal position (Figure 4a).

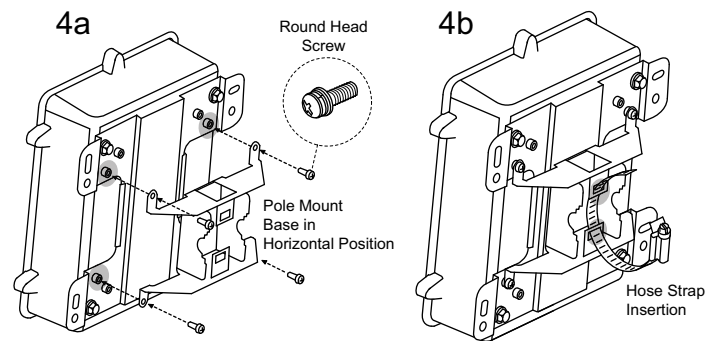3. Thread the open end of the hose strap through the two tabs on the pole mount base (Figure 4b).

4a
Round Head Screw
Pole Mount Base in Horizontal Position
4b
Hose Strap Insertion

Figure 4. Horizontal Pole Mount

4. Install the antennas (sold separately) onto the appropriate antenna ports. The antenna ports are labeled **2.4GHz** and **5GHz**.

5. Wrap the hose strap around the horizontal mounting pole and insert the end into the strap lock. Tighten the lock of the hose strap to secure the unit to the pole (Figure 5b).
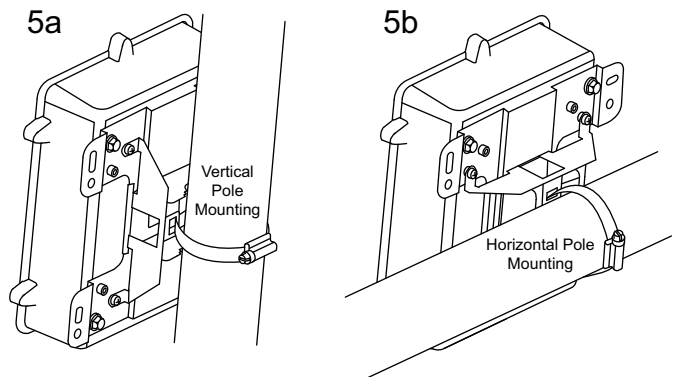

5a
Vertical Pole Mounting
5b
Horizontal Pole Mounting

Figure 5. Vertical/Horizontal Pole Mount

Grounding the BSAP

Use the supplied green grounding cable to ground the BSAP 2135 by following these steps:

1. Remove the bottom hex head screw from the BSAP unit. The location of the grounding screw is marked on the front cover.

2. Place the ground lug of the supplied grounding cable on the shank of the screw and secure the screw to the unit using an appropriate tool.

3. Attach the other end of the grounding cable to a reliable earth ground point.

⚠ **WARNING!**

Adequate grounding must be provided to the unit. A clearly marked grounding location is provided on the front of the unit for this purpose. Consult a certified electrician to ensure that all grounding and cabling is installed in compliance with the local electrical code.

Supplying Power to the BSAP

The BSAP 2135 does not have a power switch. It is powered when connected to a network device that supplies PoE based on the IEEE 802.3at standard or an external PoE injector. To power the BSAP 2135, follow these instructions:

Connect the PoE Cable to the BSAP

1. Disassemble the watertight fitting by unscrewing the cinch nut and pushing the rubber gasket out of the strain-relief fitting.

2. Thread the cinch nut onto the customer-provided RJ-45 CAT 5e or CAT 6 cable.

3. Spread the gasket open and wrap it around the cable near the RJ-45 connector.

4. Insert the RJ-45 connector through the strain-relief fitting, and press the gasket back into its original position.

5. Insert the connector into the RJ-45 receptacle on the bottom of the BSAP.

6. Gently push the strain-relief fitting along the cable until it engages with the black threads, and screw it onto the BSAP until it is firmly seated against the unit.

7. Screw the cinch nut onto the strain-relief fitting until it is well seated against the gasket, forming a watertight seal. See Figure 6.
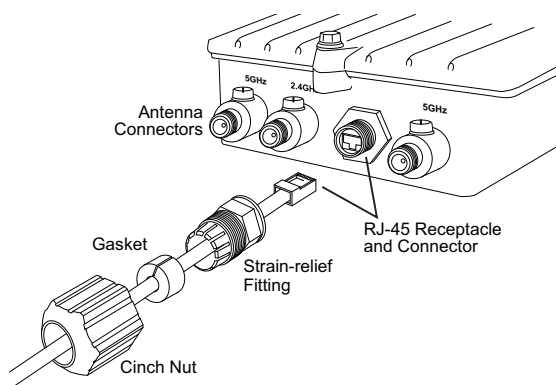

Figure 6. Watertight PoE Fitting

⚠ **CAUTION!**

For outdoor applications, the watertight fitting must be used when connecting PoE cables to the BSAP 2135. Failure to use the watertight fitting when the unit is installed outdoors will void the user's warranty and could create a fire or shock hazard.

Connect the BSAP to a PoE Source

The BSAP 2135 requires 802.3at PoE. It will not function using 802.3af PoE. Figure 7 illustrates how to provide power to the BSAP 2135 installed indoors and outdoors. Three examples are provided:

1. A PoE switch providing power in conjunction with NetVanta PoE Protector/Injector (PN: 1702595F15) installed indoors.

2. A non-PoE switch in conjunction with NetVanta PoE Protector/Injector (PN: 1702595F15) and an optional AC Power Adapter (PN: 1700501F1) to provide power installed indoors.

3. A third-party outdoor rated 802.3at PoE injector (PowerDsine PD-9001GO) or equivalent with GR-1089-Core Criteria B Surge Protection installed outdoors with mesh.

⚠ **CAUTION!**

- In all cases, connect the BSAP 2135 to Earth Ground.
- In all cases, use 802.3at PoE injectors with GR-1089-Core Criteria B surge protection.
- For outdoor applications, use only shielded or outdoor-rated Ethernet cable run inside conduit to protect it from damage from extreme weather conditions and temperatures.
- Consult a certified electrician to ensure that all grounding and cabling is installed in compliance with local electrical code.
- Any damage or malfunction resulting from exposure of this unit to lightning or transient voltage events will void the user's warranty.
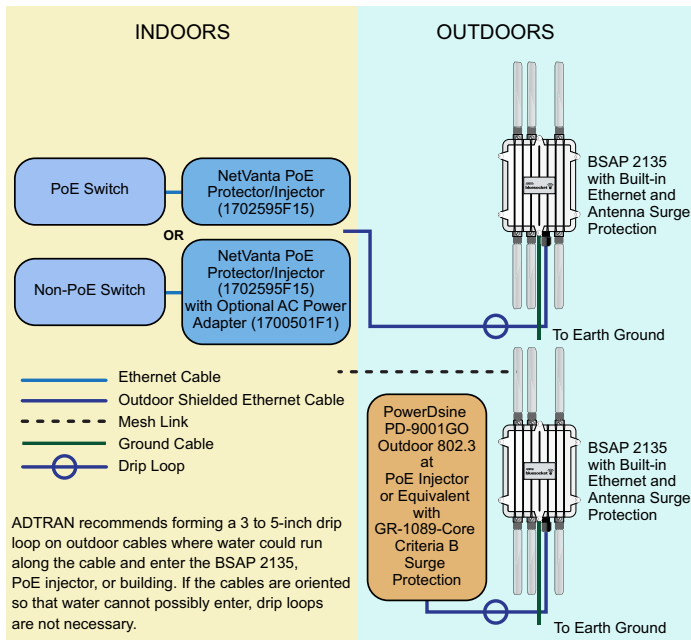
INDOORS	OUTDOORS

Figure 7. Powering the BSAP 2135 Indoors and Outdoors

USING THE AP WITH EXPRESS CLOUD

Express Cloud is now included with the purchase of new ADTRAN 2000 and 3000 series APs. Express Cloud can be used with the AP, however Elite Cloud or Elite On-Premises can be purchased for access to upgraded features.

For initial setup of Express Cloud, complete the following:

1. Go to https://adtran.com/cloud, provide the requested information to create a new account. Express Cloud access information and credentials will be sent via email within one business day.

2. After receiving email confirmation, connect AP to a power supply.

3. Connect AP to an internet-accessed network. The AP will automatically discover Express Cloud and will display in the account.

For existing Express Cloud accounts adding additional APs, complete the following:

1. Go to https://adtran.com/cloud.

2. Use the same email address as the existing Express Cloud account in the email field and the domain name in the company field.

3. If using an email address that already has an account and a domain that already exists, you will be adding additional APs to that existing account and domain.

4. Confirmation that APs have been added will be sent via email within one business day.

5. After receiving email confirmation, connect the AP to a power supply.

6. Connect the AP to an internet-accessed network. The AP will automatically discover Express Cloud and will display in the account.

Express Cloud support is available in the ADTRAN interactive support community online at https://supportforums.adtran.com. For further details regarding Express Cloud, Elite Cloud and Elite On-Premises, please refer to the FAQ in the support community. For further information on creating an Express Cloud account refer to Creating an Express Cloud Account in the support community.

USING THE AP WITH ELITE CLOUD

Purchasing an Elite Cloud subscription automatically creates a user cloud account. All further communication will be provided via email. For initial setup of Elite Cloud, complete the following:

1. Elite Cloud access information and credentials will be sent via email within one business day.

2. After receiving email confirmation, connect the AP to a power supply.

3. Connect the AP to an internet-accessed network. The AP will automatically discover Elite Cloud and will display in the account.

For existing Elite Cloud accounts purchasing additional APs and Elite Cloud Subscriptions, complete the following:

1. Confirmation that APs have been added will be sent via email within one business day.

2. After receiving email confirmation, connect the AP to a power supply.

3. Connect AP to an internet-accessed network. The AP will automatically discover Elite Cloud and will display in the account.

USING THE AP WITH ELITE ON-PREMISES

The AP can be configured for use with the Bluesocket virtual wireless local area network (vWLAN), referred to as Elite On-Premises. Using AP discovery to configure the AP with a previously-installed vWLAN can be achieved by allowing the AP to discover the vWLAN and receive its configuration information. This AP discovery process uses an algorithm that attempts discovery methods in this order: static configuration, Dynamic Host Control Protocol (DHCP) vendor option (**43**), Domain Naming System (DNS) discovery, cached vWLAN info, and Express/Elite Cloud Zero Touch discovery. If no response to the discovery request is received, the algorithm moves to the next method in the list.

Two additional network components can be configured to facilitate AP discovery:

1. An external DHCP server can be configured to assign IP addresses to APs associated with the vWLAN. When configuring the DHCP server, make sure to configure the Bluesocket DHCP Vendor option (**43**) on the server.

2. An external DNS server can be configured to resolve the name **apdiscovery** to the IP address of the vWLAN in the network environment.

ℹ️ **NOTE**

When running static configuration the AP will not automatically query the other discovery methods.

3. For more information on the vWLAN and AP discovery, please refer to the vWLAN AP Discovery configuration guide available online at https://supportforums.adtran.com.

Connecting to the AP

If powering the AP using a network device such as a switch, complete the following:

1. Connect the AP Ethernet port to the appropriate switch port.

2. Obtain the IP address of the AP from the Dynamic Host Control Protocol (DHCP) server based on the MAC address of the AP. DHCP is enabled by default.

3. Use a Secure Shell (SSH) client to connect to the AP.

If powering the AP using a PoE injector, complete the following:

1. Connect the Ethernet port of the AP to the **OUT** port of the PoE injector.

2. Connect the Ethernet port of the computer to the **IN** port on the PoE injector.

3. Use a Secure Shell (SSH) client to connect to the AP.

If the AP is powered using the optional DC power adapter, complete the following:

1. Connect the Ethernet port of the AP to the Ethernet port of the computer.

2. Use a Secure Shell (SSH) client to connect to the AP.

CONFIGURING THE AP'S IP ADDRESS OR STATIC DISCOVERY USING THE CLI

By default, DHCP is enabled on the AP. However, if static configuration is required for the IP address or AP discovery for the AP, users can access the AP's CLI using an SSH client.

To access the AP CLI using an SSH client, complete these steps:

1. Ensure that the AP is connected to a controlling computer (using the provided RJ-45 Ethernet cable).

2. Specify that the computer's TCP/IP setting is **On** or **Enabled** by navigating to Control Panel and selecting **Network Connections**.

3. Double-click the connection of your network interface card and select **Internet Protocol (TCP/IP)**.

4. Select Properties then specify that the TCP/IP setting is enabled.

5. Set your PC to a static IP address of **192.168.190.2** with a subnet mask of **255.255.255.0**.

6. Access the AP's command line interface (CLI) using an SSH client.

7. Open an SSH connection using the unit's default IP address (**192.168.190.1**) and port 2335 connected to the **LAN1** port on the AP.

8. At the prompt, enter the username **adm1n** and the password **blue1socket**.

Please indicate in your request that this is a GPL Source Request. Please also identify the requested product's part number. This offer is valid to anyone in receipt of this information.

Using the 5 GHz U-NII Band in Europe, Australia, and New Zealand

In Europe, Australia, and New Zealand, the 5 GHz U-NII low band (5.15 to 5.35 GHz, channels 36, 40, 44, and 48) is designated for indoor use only. If the BSAP 2135 is installed indoors, for example in a harsh environment such as a warehouse, it must be configured for indoor use.

To enable the band/channels for indoor installation, follow these steps in the graphical user interface (GUI):

1. Navigate to **Configuration**

2. Select **Wireless**

3. Select **Access Points**

Select the appropriate access point link to display the configuration menu. Using the **Installed** drop-down list, select **Indoor**.

CONFIGURING THE BSAP'S IP ADDRESS USING THE CLI

By default, DHCP is enabled on the BSAP 2135. However, if you need to statically configure the IP address or statically configure AP discovery for the BSAP, complete these steps:

1. Ensure that the BSAP is connected to a controlling computer (using the provided RJ-45 Ethernet Cable).

2. Specify that the computer's TCP/IP setting is **On** or **Enabled** by navigating to **Control Panel** > **Network Connections** and double-clicking the connection of your network interface card.

3. Select **Internet Protocol (TCP/IP)** and select **Properties**. Then specify that the TCP/IP setting is enabled.

4. Set your PC to a static IP address of **192.168.190.2** with a subnet mask of **255.255.255.0**.

5. Next, access the BSAP's command line interface (CLI) using an SSH client. Open an SSH connection using the unit's default IP address (**192.168.190.1**) and port 2335 connected to the **LAN1** port on the BSAP. To access the unit using vWLAN, and for more instructions about CLI configuration, refer to the *Bluesocket vWLAN Administrator's Guide*, available online at https://supportforums.adtran.com.

CONFIGURING THE APPLICATION

More detailed documentation for configuring the BSAP 2135 is provided in the *Bluesocket vWLAN Administrator's Guide*, available online at https://supportforums.adtran.com.

Additional safety and regulatory guidelines are given in the document *Bluesocket Compliance Notice* available online at https://supportforums.adtran.com.

FCC Radio Frequency Interference

This device complies with Part 15 of the Federal Communications Commission (FCC) rules. The operation of this device is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received including interference that may cause undesired operation.

| i | **NOTE**

Additional information for maintaining safe operation and compliance with FCC rules and Regulations are provided in the document *Bluesocket Compliance Notice* available online at https://supportforums.adtran.com.

Third Party Software

The software included in this product contains copyrighted software that is licensed under the GNU General Public License (GPL). You may obtain the complete corresponding source code of such software components from ADTRAN for a period of three years after our last shipment of this product.

If electronic distribution is desired, you may send your request to OpenSourceReviewBoard@adtran.com.

If distribution on physical media is desired, you may send a request, together with a money order or check for $5, to

ADTRAN, Inc. Attn:
OSRB Coordinator 901 Explorer Blvd.Huntsville, AL 35806

Please indicate in your request that this is a GPL Source Request. Please also identify the requested product's part number. This offer is valid to anyone in receipt of this information.

MAINTENANCE

The BSAP does not require routine hardware maintenance for normal operation. ADTRAN does not recommend that repairs be attempted in the field. Repair services may be obtained by returning the defective unit to ADTRAN. Refer to the warranty for further information. Field support for software is provided through upgrade facilities.

Specifications

Specifications for the BSAP are as follows:

- Environmental
  - ♦ Operational Temperature Range: –40°C to +55°C

ACRONYMS

BSAP	Bluesocket Access Port
CLI	Command Line Interface
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
PoE	Power Over Ethernet
SSH	Secure Shell
TCP/IP	Transmission Control Protocol/Internet Protocol
vWLAN	Virtual Wireless Local Area Network

SAFETY AND REGULATORY

Refer to the Safety and Regulator Notice for this product (P/N: 1700962F1-17) for detailed safety and regulatory information.

Consultez l'avis sur la sécurité et la conformité à la réglementation pour ce produit (61700962F1-17) pour obtenir des renseignements détaillés sur la sécurité et la réglementation.

Ausführliche Sicherheits- und regulatorische Informationen sind in der Konformitätserklärung zur Sicherheit und Einhaltung von Normen zu diesem Produkt (61700962F1-17) aufgeführt.