

# AltoPlex D621 Quick Start Guide



## D621 box contents

- ☞ D621 radio.
- ☞ IP67 cable gland.
- ☞ QR code card for Quick Start and User Guide

## Available Power over Ethernet (PoE) Options

- ☞ Indoor PoE injector: Part number AX-P-IN-AT-5G.
- ☞ Outdoor PoE switch: Part number AX-PSW-OD-4AT-4C25.  
Mounting bracket: Part number AX-PSW-OD-MOUNT.

## Connect to the radio

- 1 Provide power to the radio by using either a PoE injector or a PoE switch. Connect your computer to the LAN port on the injector, or to the network.
- 2 Access the WebUI of the radio by typing **https://hostname.local** or **https://ip\_address** in your browser's URL address bar.
  - **Hostname** — If your computer supports mDNS and is on the same subnet as the radio, you can use the hostname (**KB-XX-XX-XX**) to connect to the radio.
  - **IP address** — If the radio is connected to a network with a DHCP server, it will automatically get an IP address from the server.
    - The default fallback static IP address varies by firmware version:
      - ◆ 3.6.0 or newer: 192.168.0.1. Radios upgraded to 3.6.0 will have a default IP of 192.168.0.51 until they have been factory reset.
      - ◆ Prior to 3.6.0: The default IP is on a label affixed to the front of the radio at manufacturing time.
    - To connect to the radio by using the IP address, you may need to reconfigure your computer's networking to be a member of the radio's subnet (for example, 192.168.0.x).
  - **Wi-Fi** — You can also access the radio by using the Wi-Fi management access point. You must be in close range of the radio, generally within 10-20 feet.
    - Default SSID — Hostname of the radio (**KB-XX-XX-XX**).
    - Default password — **AltoWav@123**.
    - Default IP address Wi-Fi management purposes — **192.168.5.1**.
- 3 At the warning screen, click **Advanced** and then **Proceed to...**
- 4 Click **login** to log into the WebUI. The default password is **admin**.

## Upgrade firmware

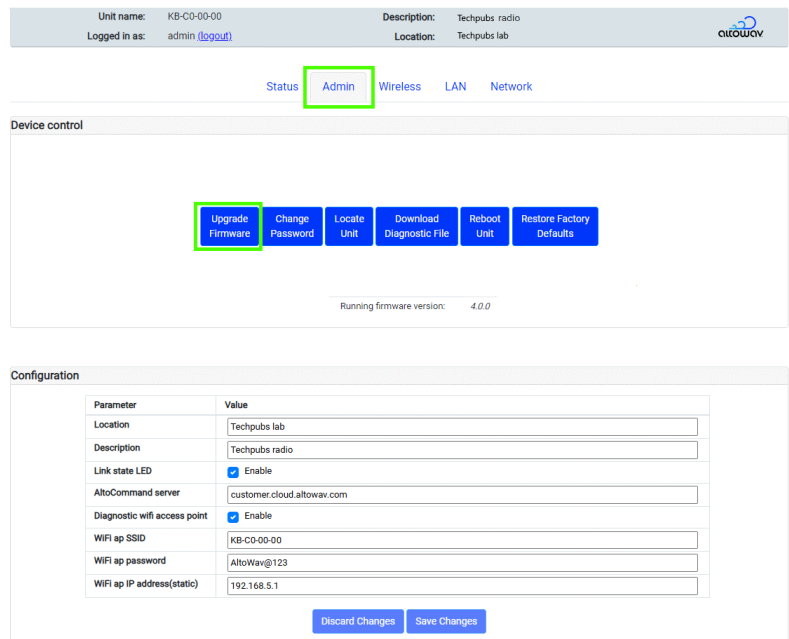
You should upgrade firmware to the latest version prior to installation. After installation, we recommend using the AltoCommand server for upgrades. AltoCommand facilitates fleet-wide upgrades performed in the correct sequence to minimize radio downtime. See the [AltoCommand User Guide](#) for information and procedures.

**Note:** If the device's firmware is at 3.3.1 or previous prior to upgrading, we recommend that you perform a factory reset after the upgrade.

- 1 [Download the latest firmware](#) to your local PC and unzip the downloaded file.
- 2 Log into the WebUI of the radio as described in [Connect to the radio](#).
- 3 Click the **Admin** tab.
- 4 Click **Upgrade firmware**.
- 5 Click **Choose file** and select the firmware file you downloaded in step 1.

The firmware filename consists of three parts: kb\_sw-prod-NOMAD-<version\_number>.

- 6 Click **Start Upgrade**.
- 7 If the device's firmware was at 3.3.1 or previous prior to the upgrade, factory reset the device:
  - a. Log into the WebUI of the radio again.
  - b. Click the **Admin** tab.
  - c. Click **Restore Factory Defaults**.
  - d. When prompted, type **confirm factory reset** and click **OK**.



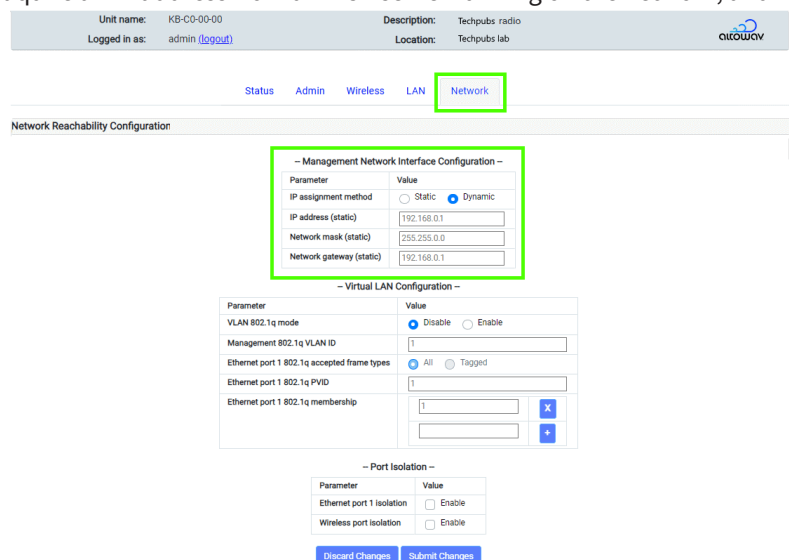
The screenshot shows the WebUI interface for a radio. At the top, it displays 'Unit name: KB-C0-00-00', 'Logged in as: admin (logout)', 'Description: Techpubs radio', and 'Location: Techpubs lab'. The 'Admin' tab is selected and highlighted with a green box. Below the tabs, there is a 'Device control' section with several buttons: 'Upgrade Firmware' (highlighted with a green box), 'Change Password', 'Locate Unit', 'Download Diagnostic File', 'Reboot Unit', and 'Restore Factory Defaults'. Below these buttons, it shows 'Running firmware version: 4.0.0'. The 'Configuration' section is visible below, showing a table of parameters and their values.

Parameter	Value
Location	Techpubs lab
Description	Techpubs radio
Link state LED	<input checked="" type="checkbox"/> Enable
AltoCommand server	customer.cloud.altoway.com
Diagnostic wifi access point	<input checked="" type="checkbox"/> Enable
WiFi ap SSID	KB-C0-00-00
WiFi ap password	AltoWav@123
WiFi ap IP address(static)	192.168.5.1

## Set the radio's static IP address

By default, AltoPlex radios use dynamic IP assignment to acquire an IP address from a DHCP server running on the network, and have a default fallback IP address of 192.168.0.1. If your radio is not connected to a network with a DHCP server, you should change the default IP address to ensure that there are no IP address conflicts during configuration.

- 1 After logging into the radio, click the **Network** tab.
- 2 In the **Management Network Interface Configuration** section, for **IP assignment method**, click **Static**.
- 3 For **IP address**, type the new static IP address.
- 4 For **Network mask**, type the network mask, for example, 255.255.255.0
- 5 For **Network gateway**, type the IP address of the network gateway.



The screenshot shows the WebUI interface for a radio. At the top, it displays 'Unit name: KB-C0-00-00', 'Logged in as: admin (logout)', 'Description: Techpubs radio', and 'Location: Techpubs lab'. The 'Network' tab is selected and highlighted with a green box. Below the tabs, there is a 'Network Reachability Configuration' section. The 'Management Network Interface Configuration' section is highlighted with a green box and shows the following parameters:

Parameter	Value
IP assignment method	<input type="radio"/> Static <input checked="" type="radio"/> Dynamic
IP address (static)	192.168.0.1
Network mask (static)	255.255.0.0
Network gateway (static)	192.168.0.1

Below this, there is a 'Virtual LAN Configuration' section with the following parameters:

Parameter	Value
VLAN 802.1q mode	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Management 802.1q VLAN ID	1
Ethernet port 1 802.1q accepted frame types	<input checked="" type="radio"/> All <input type="radio"/> Tagged
Ethernet port 1 802.1q PVID	1
Ethernet port 1 802.1q membership	1

At the bottom, there is a 'Port Isolation' section with the following parameters:

Parameter	Value
Ethernet port 1 isolation	<input type="checkbox"/> Enable <input checked="" type="checkbox"/> Disable
Wireless port isolation	<input type="checkbox"/> Enable <input checked="" type="checkbox"/> Disable

## Configuration

There are two primary mechanisms for configuring the D621:

- [Bench configuration](#). With bench configuration, radios are configured prior to installation.
  - After bench configuration, distribution nodes must be installed in a specific location that matches preconfigured radio links.
  - All D621s that will operate as client nodes must be bench configured to set their role to **CN**.
  - Client nodes (both D621s configured as CNs, and C410s/C420s) should be installed in the field with clear line of sight to the DN they will link to, and the link should be configured on the DN after installation.
- Distribution nodes can be installed in the field without prior configuration, and then linked by using [DN link auto-configuration](#).
  - This does not require that distribution nodes are installed in a specific location.
  - The installer should note the MAC address and installation location of each radio.

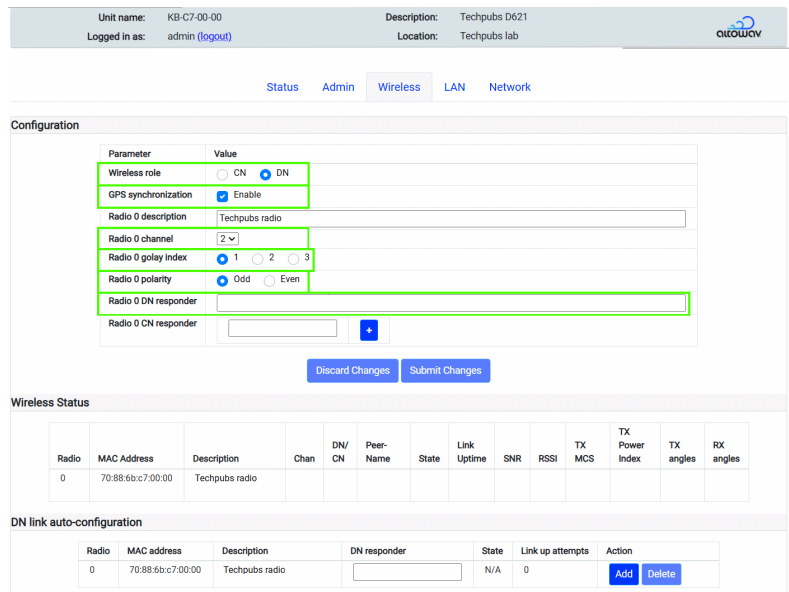
## Bench configuration

**Note:** By default, GPS is required to initiate links between devices. If you are testing radio links indoors, or in locations with weak GPS signals, the link may not properly form. In this case, disable **GPS synchronization** on the **Wireless** tab. Once the radio is installed, GPS should be reenabled.

- 1 Log into the WebUI of the radio as described in [Connect to the radio](#).
- 2 Click on the **Admin** tab and set the **Location** and **Description** of the radio. This is useful for install and troubleshooting. Click **Submit Changes**.
- 3 Click on the **Wireless** tab.

- If the device is being configured as a client node, for **Wireless role**, click **CN**.
- If the device is being configured as a distribution node (DN) and it will form a link to another DN, the following parameters must be configured on both DNs:
  - Both devices must be set to the default **Wireless role** of **DN**.
  - **Channel** — Both distribution nodes must be set to the same channel.
  - **Golay index** — Both distribution nodes must be set to the same Golay index.
  - **Polarity** — Must be set to the opposite polarity of the other distribution node.
  - **DN responder** — Must be set to the MAC address of the other distribution node in the link.
  - If the device will be linked to client nodes, see [Configure links to client nodes](#) for instructions.

- 4 Click **Submit Changes**.
- 5 After bench configuration is complete, install the radios as described in [Installation](#). Radios must be installed so that they have line of site to their linked DNs.



Unit name: KB-C7-00-00      Description: Techpubs D621  
 Logged in as: admin (logout)      Location: Techpubs lab

Status Admin **Wireless** LAN Network

Configuration

Parameter	Value
Wireless role	<input type="radio"/> CN <input checked="" type="radio"/> DN
GPS synchronization	<input checked="" type="checkbox"/> Enable
Radio 0 description	Techpubs radio
Radio 0 channel	2
Radio 0 golay index	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
Radio 0 polarity	<input checked="" type="radio"/> Odd <input type="radio"/> Even
Radio 0 DN responder	
Radio 0 CN responder	

Discard Changes Submit Changes

Wireless Status

Radio	MAC Address	Description	Chan	DN/ CN	Peer-Name	State	Link Uptime	SNR	RSSI	TX MCS	TX Power Index	TX angles	RX angles
0	70:88:6b:c7:00:00	Techpubs radio											

DN link auto-configuration

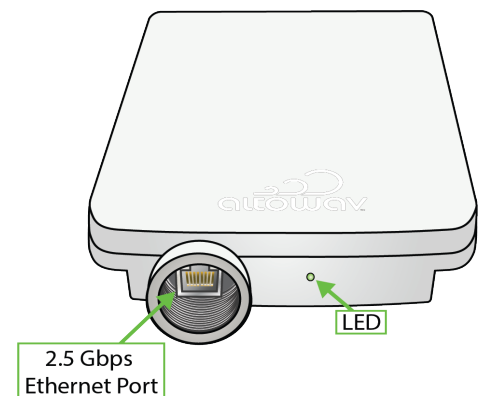
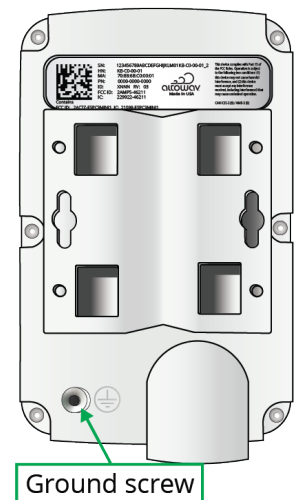
Radio	MAC address	Description	DN responder	State	Link up attempts	Action
0	70:88:6b:c7:00:00	Techpubs radio		N/A	0	Add Delete

## Installation

- Use a detailed network diagram to provide installation information for radios in the network.
  - Site location for installation – used for location/description information.
  - Planned role – Distribution node (DN) or client node (CN). The D621 defaults to a DN role.
    - ◆ If the radio will be used as a client node:
      - ❖ The hostname (**KB-XX-XX-XX**) is required to create a link to the radio. The hostname is included on the box label and listed as HN: on the label on the back of the radio.
      - ❖ During [Bench configuration](#), configure the radio to use the CN role.
- If the radio will be used as a distribution node and will link to another distribution node, use either [Bench configuration](#) prior to installation, or [DN link auto-configuration](#) after installation.
- If the radios are repositioned or re-aimed after connections are made, rebeamform the link by either:
  - Removing and re-adding the link from the distribution node's **CN responder** list.
  - Rebooting or power-cycling the radio.

## Install the radio

- 1 Attach a ground wire to the ground screw. Local codes determine whether grounding is required or optional.
- 2 Securely mount the D621 on a pole or wall with clear line of sight (LOS) for the wireless link, and no obstructions to GPS above the unit.
  - Make sure the device is aimed for clear line of sight to any client nodes and, if applicable, to a linked remote distribution node.
  - Use [Mounting brackets](#) for a secure mount on a pole or wall.
- 3 Connect to PoE:
  - a. Install Cat6 cable into Ethernet port of the D621 and the other end into the PoE injector/switch. See [Cable gland](#) for information about installation of the Cat6 cable.
  - b. Power up the PoE injector/switch.
- 4 Verify power.
  - LED flashing pattern:
    - Red while powering up.
    - Flashing green/red while booting
    - Flashing green (waiting for wired or wireless links) or solid green (wire connection and at least one wireless connection).



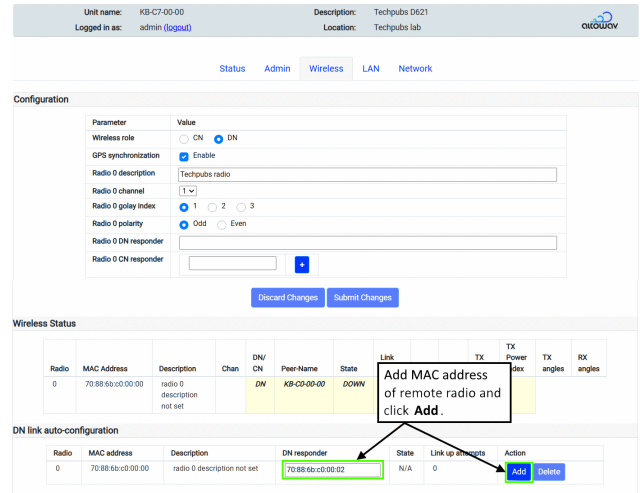
## DN link auto-configuration

If bench configuration wasn't used to configure DN links prior to installation, use the DN link auto-configuration to configure the links.

**Note:** DN link auto-configuration requires that you have the location and MAC addresses of installed DNs.

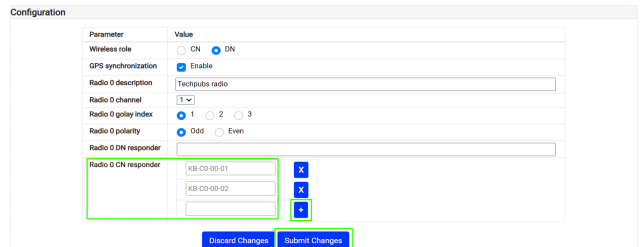
- 1 Install the radios as described in [Installation](#).
- 2 [Log into the WebUI](#) of the D621 that is initiating the link.
- 3 Click the **Wireless** tab.
- 4 In the **DN link auto-configuration** section, for **DN responder**, add the MAC address of the D621 that will be linked to the initiator.
- 5 Click **Add**.

After DNs have been configured and installed, install client nodes if applicable, and [Configure links to client nodes](#).



## Configure links to client nodes

- 1 Install the client node as described in the C410 and C420 Quick Start Guide. Make sure there is a clear line of sight from the client node to the D621.
- 2 Log into the WebUI of the D621 that is initiating the link, as described in [Connect to the radio](#).
- 3 Click the **Wireless** tab.
- 4 In the **Configuration** section, for **Radio 0 CN responder**, type the hostname (**KB-XX-XX-XX**) of the client node.
- 5 Click **Submit Changes**.
- 6 Verify connections as devices are installed. Click **+** to add additional client nodes.



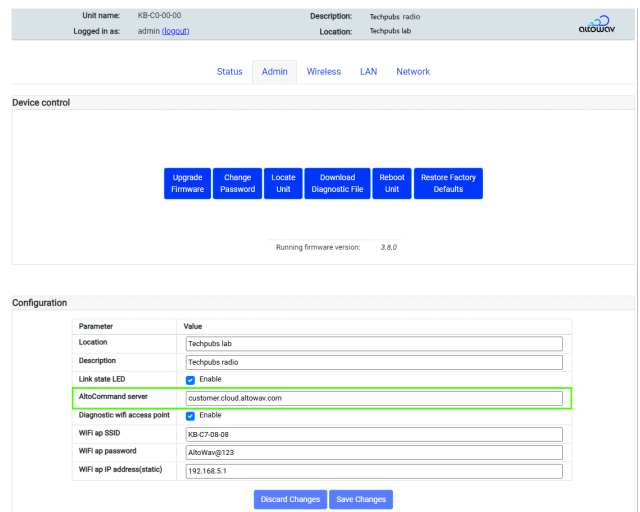
## Connect the radio to an AltoCommand server

AltoCommand is a cloud-based wireless management interface that works in tandem with AltoPlex radios to provide deployment, management, and monitoring for dense 60GHZ networks. D621 operating in DN mode are configured to connect to an AltoCommand server; CNs inherit the AltoCommand configuration from their linked DN.

To configure the D621 to connect to AltoCommand:

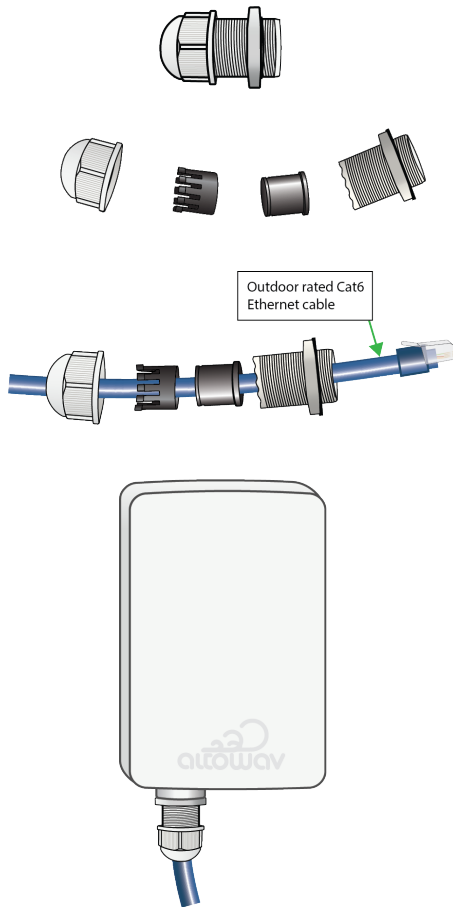
- 1 Log into the WebUI of the radio, as described in [Connect to the radio](#).
- 2 Click the **Admin** tab.
- 3 In the **Configuration** section, for AltoCommand server, type the fully-qualified domain name or IP address of the AltoCommand server.
- 4 Click **Save Changes**.

After the connection to the **AltoCommand server** has been configured on the D621, the radio sends an approval request to the server.



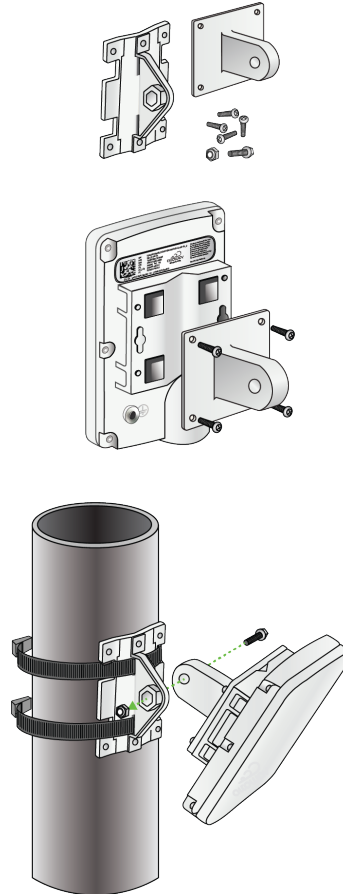
## Cable gland

Ethernet cable installation

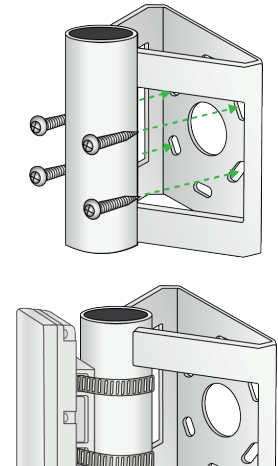


## Mounting brackets

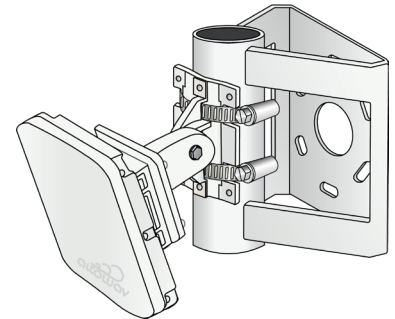
Model number: AX-AW3-MT-EXT



Model number: AX-AW3-MT-WALL



Both mounting options combined:



## Further information

For additional information, see:

- [D621 User Guide](#)
- [C410/C420 Quick Start Guide](#)
- [C410/C420 User Guide](#)
- [AltoCommand Quick Start Guide](#)
- [AltoCommand User Guide](#)
- [AltoPlex REST API version 002 Usage Guide](#)

## Technical support

Altowav is committed to providing our customers with high quality technical support. Contact us at:

✉ [support@altowav.com](mailto:support@altowav.com)

🌐 [support.altowav.com](http://support.altowav.com)