Airgain)))

AIRGAINCONNECT® FLEET™ 5G VEHICLE GATEWAY

Quick Start Guide

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1   Introduction

The AC-Fleet 5G Vehicle Gateway features a 5G modem, Wi-Fi 6 router, Gigabit Ethernet, and a high-performance antenna designed to be mounted to the roof of any vehicle.

Local configuration of AC-Fleet is done using the device's Graphical User Interface (GUI) with a LAN or WLAN connection, while remote configuration and management is available from AC-Cloud. This guide offers recommendations for getting started with both.

Notes:

- You must first configure eSIM profiles in AC-Cloud to be activated on a device.

  If the device has already been activated using the AC-Fleet Quick Activation Guide, then skip to Section 4.5 for additional guidance on getting started.

- Ensure the device is only installed by a professional using Airgain's installation instructions.

2   Device Information

Important device information is provided on the following labels and can be requested from Customer Support:
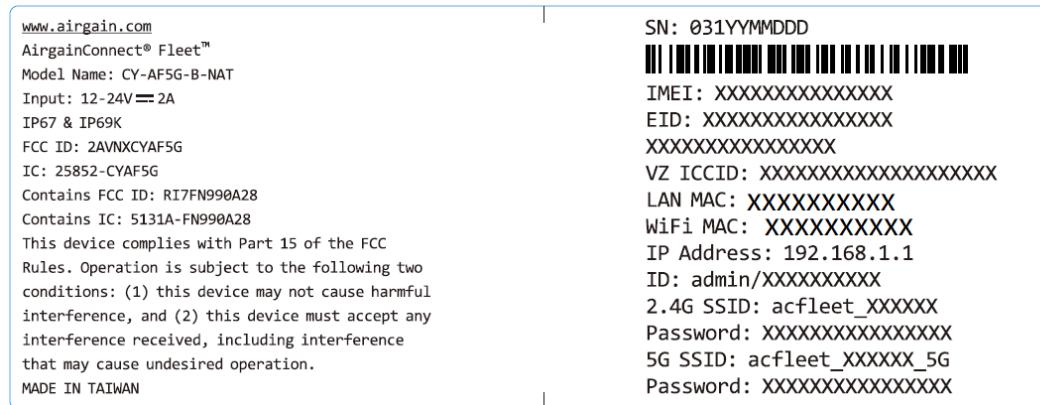
*Figure 1 - Product Label (attached to the Ethernet cable)*

Figure 2 – Device Package Label

1. **Device serial number (SN)**: Unique identification number for each device.

   Note: This Is also included on the purchase invoice for warranty and adding devices to AC-Cloud.

2. **International Mobile Equipment Identify (IMEI)**: Unique identification number for the cellular module inside each device. This is required to activate the service with your chosen carrier.

3. **Embedded Identity Document (EID)**: Unique identification number for the eSIM chip inside each device. This is required to activate service with your chosen carrier.

4. **Verizon (VZ) Integrated Circuit Card Identification (ICCID)**: Unique identification number for the preloaded Verizon eSIM profile. This is required to activate the service with Verizon.

5. **IP Address:** Web address for accessing the local device GUI after connecting to AC-Fleet.

6. **ID**: Credentials for logging in to the local device GUI.

7. **2.4G SSID and Password**: Credentials for connecting to the device's 2.4 GHz Wi-Fi access point.

8. **5G SSID and Password**: Credentials for connecting to the device's 5 GHz Wi-Fi access point.

3 Mobile Network Operator (MNO) Activation

AC-Fleet uses eSIM technology with the following benefits versus traditional routers and SIM cards:

Traditional vehicle routers use SIM cards   **AC-Fleet uses eSIM**
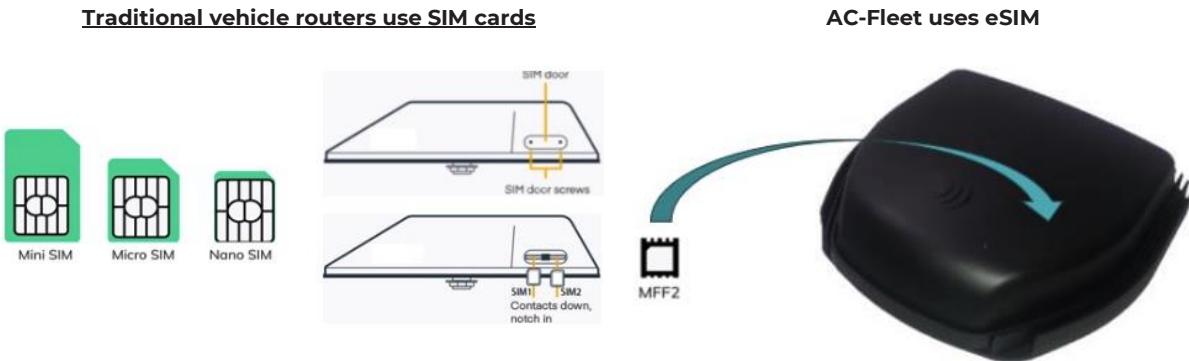
Problems in fleets:

- A physical Sim must be installed in EVERY vehicle.
- Switching carriers requires EVERY vehicle to be touched.
- SIM cards can fail due to vibration or heat.
- SIM card "doors" on externally-mounted routers can leak.

Benefits for fleets:

- Cellular eSIM download. No physical installation.
- Up to 4 MNO eSIM profiles installed simultaneously.
- No vibration/heat failures.
- Completely sealed unit. No doors. Tested to IP67 and IP69K.

Figure 3 – Benefits of eSIM Versus SIM Cards.

3.1 Verizon Activation

1. AC-Fleet includes a preloaded Verizon eSIM profile that is already downloaded and ready for activation.
2. Contact your account representative at Verizon to ask about available data plans.
3. You must provide the IMEI and VZ ICCID for each device to be activated.
4. The default APN **v5ga01internet** is typically used, but please confirm with Verizon.

3.2 T-Mobile Activation

1. Contact your account representative at T-Mobile to ask about available data plans.
2. You must provide the IMEI and EID for each device to be activated.
3. Confirm with T-Mobile which APN to connect with:
    a. If the data plan connects with APN **fast.t-mobile.com** then the universal activation code for downloading T-Mobile eSIM profiles is **LPA:1$T-MOBILE.GDSB.NET$**

b. If the data plan connects with APN **iot.t-mobile.com** then the universal activation code for downloading T-Mobile eSIM profiles is `LPA:1$T-MOBILE.IDEMIA.IO$`

3.3 AT&T and FirstNet Activation

1. Contact your account representative at AT&T/FirstNet to ask about available data plans.
2. You must provide the IMEI and EID for each device to be activated.
3. A physical card with QR code will be shipped to you for each eSIM profile.

Figure 4 – Examples of physical eSIM cards from AT&T and FirstNet.

a. The QR code contains a unique activation code assigned to a specific ICCID.
b. Request that this ICCID match the ICCID assigned to each IMEI/EID pair.
   i. **WARNING: If the ICCIDs do not match, then the eSIM profile won't work.**
   ii. Airgain recommends you ask them to provide the last four digits of the corresponding IMEI with each physical card to avoid ICCID mismatching.
c. The activation code cannot be extracted using a smart phone camera; you must use a web QR reader tool such as https://webqr.com/.

4. The default APN **broadband** is typically used for AT&T and `firstnet-broadband` for FirstNet, but please confirm.

4 Configuration on AC-Cloud
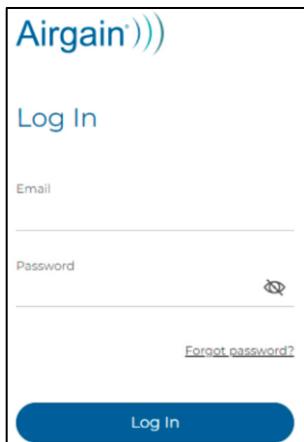
4.1 Logging In

Figure 5 – AC-Cloud Log In screen.

1. Navigate to https://ac-cloud.airgain.com/ in an internet browser.
2. Enter the email and password from your AC-Cloud activation email and click **Log In**.
    a. If your organization does not already have an AC-Cloud account, contact Customer Support to request one be created and provide the following:

        i. Organization name
        ii. Organization address
        iii. Admin name
        iv. Admin email address
        v. Admin phone number
        vi. Copy of the AC-Fleet invoice and corresponding CSV file with the device serial numbers to add

    Note: Airgain support will send a CSV file with all unique device info for future reference.

    b. If your organization already has an AC-Cloud account, request your admin to grant you access.

3. To change the password, click **Forgot password?**

4.2 Overview
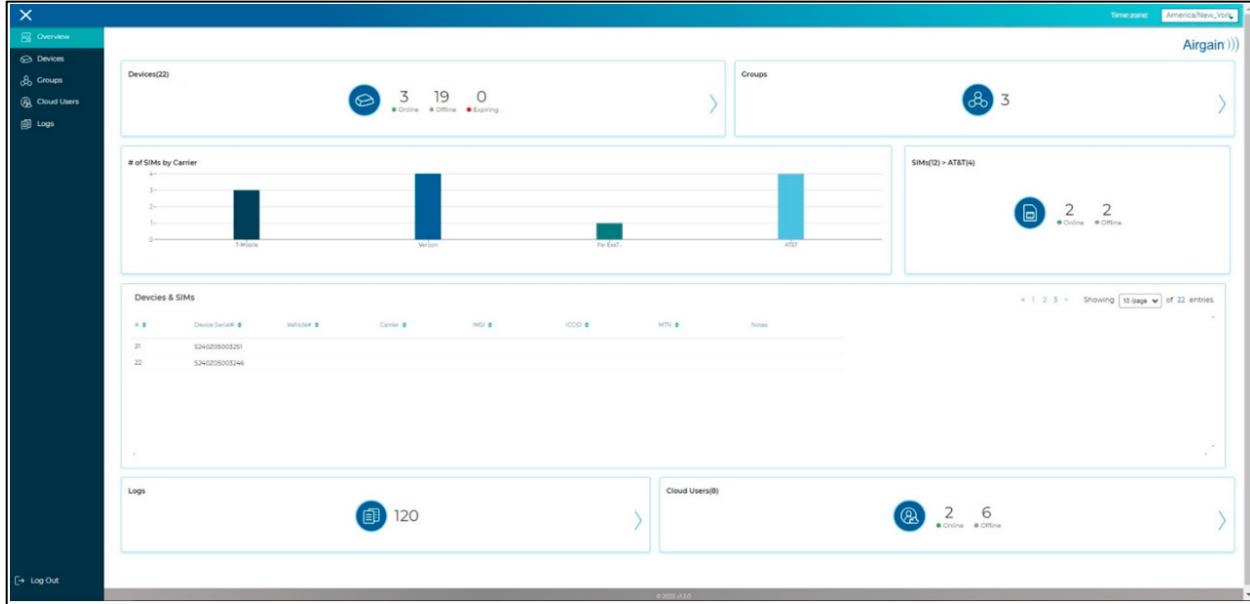
Figure 6 – Dashboard with summary of and access to the various AC-Cloud features.

4.3 Devices
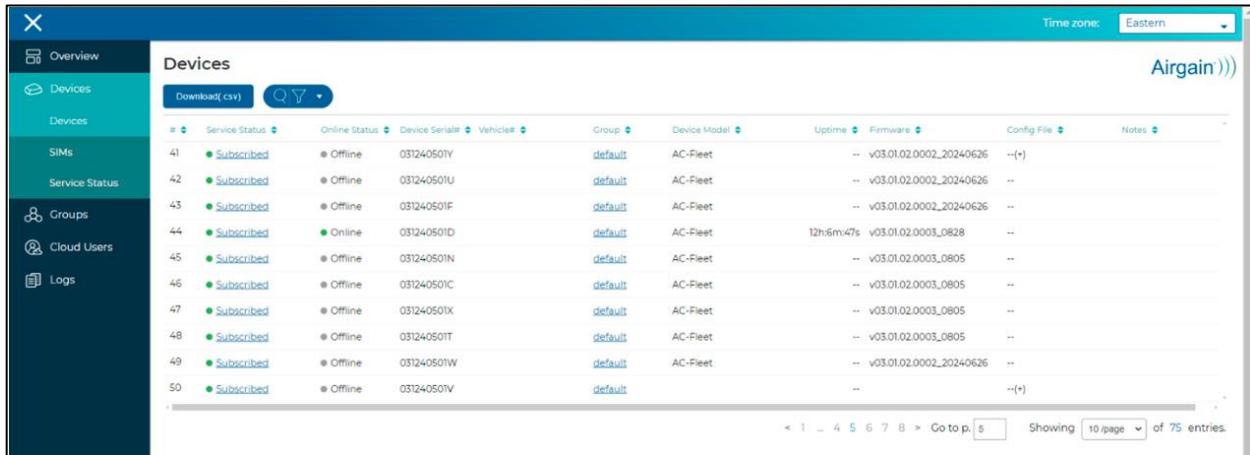
Figure 7 – Device management screen.

1. Ensure all AC-Fleet devices are registered to the organization's AC-Cloud account.
    a. If you need new devices added to your account, contact Customer Support with your organization name, copy of the invoice, and corresponding CSV file with device serial numbers.

    Note: Airgain support will send a CSV file with all unique device info for future reference.

b. **Service Status** can indicate:

    i. **Subscribed**: Device has an active AC-Cloud subscription.

    ii. **Expiring**: AC-Cloud subscription for this device expires within 30 days. Contact <u>Customer Support</u> to renew.

    iii. **Not Subscribed**: AC-Cloud subscription has expired for this device and cannot be managed remotely. Contact <u>Customer Support</u> to renew.

c. **Online Status** can indicate:

    i. **Online** indicates the device is connected to AC-Cloud.

    ii. **Offline** indicates the device is not connected to AC-Cloud.

d. **Uptime** shows how long the device has been Online.

4.4 SIMs

Figure 8 – SIM management screen.

1. Browse eSIM profiles that have been activated for each device.

a. **eSIM Status** can indicate:

    i. **In Use**: Device is currently connected with this profile.

       Note: AC-Cloud retains the last value reported by the device, so some profiles appear as **In Use** even when the device is offline.

    ii. **Activated**: Profile is available for cellular connection.

   iii. **Assigning**: Profile has been submitted and is pending device reboot for download/activation.

iv. **Downloading**: Download/activation process has started for this profile.

  Note: The entire process of downloading and activating can take around three minutes.

v. **Retry Downloading**: Previous download attempt failed and requires device reboot to try again.

vi. **Fail To Download**: Profile has reached its limit of three failed download attempts and must be resubmitted for download/activation.

vii. **Activating**: Specific to the preloaded Verizon profile since downloading is not relevant and indicates the activation process has started.

viii. **Fail To Activate**: Preloaded Verizon profile activation failed and must be resubmitted.

ix. **Updating**: Configuration changes have been made to this profile which require device reboot for implementation.

x. **Deleting**: Profile will be deleted from AC-Fleet upon next reboot.

2. Click **Add** to configure a new device eSIM.
3. Click on a device SN for eSIM configuration options.

  Note: You can manually add additional eSIM profiles.
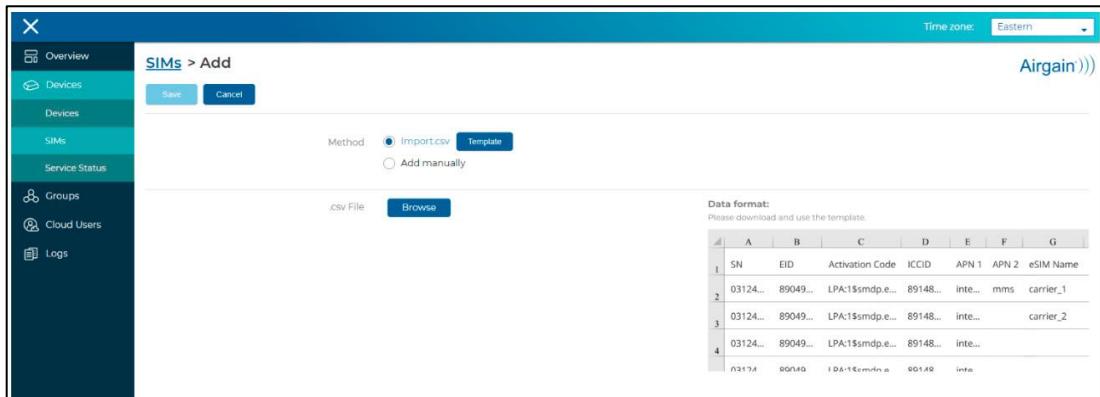
Figure 9 – Adding a single eSIM profile, or multiple via bulk upload.

4. Upon clicking **Add**, there is an option for bulk upload using a CSV template.

  a. Click on **Template** to download the `Import.csv` template and then **Browse** to upload.

Note: Bulk upload is only for adding new eSIM profiles, not for editing existing profiles.

b. To activate a preloaded Verizon profile, enter the serial number (SN), EID, "preload" for Activation Code, ICCID and APN 1.

   i. For bulk uploads, Airgain recommends you copy the SN, EID and Verizon (VZ) ICCID info from the device CSV file provided by Airgain support.
   ii. Ensure the VZ ICCID has an active data plan with Verizon beforehand.
   iii. The default APN `v5ga01internet` is typically used, but please confirm with Verizon.

c. To download and activate all other profiles, enter the SN, EID, Activation Code and APN 1.

   i. For bulk uploads Airgain recommends you copy the SN and EID info from the device CSV file provided by Airgain support.
   ii. Ensure an eSIM profile with active data plan has been assigned to the EID and confirm with T-Mobile which APN to connect with:

      1. If connecting with APN `fast.t-mobile.com` the Activation Code for downloading eSIM profiles is:
         `LPA:1$T-MOBILE.GDSB.NET$`
      2. If connecting with APN `iot.t-mobile.com` the Activation Code for downloading eSIM profiles is:
         `LPA:1$T-MOBILE.IDEMIA.IO$`

   iii. AT&T and FirstNet send a physical QR card for extracting the activation code.
      1. You cannot extract it using a smart phone camera, you must use a web QR reader tool such as https://webqr.com/.
      2. The default APN `broadband` is typically used for AT&T and `firstnet-broadband` for FirstNet, but please confirm.
   iv. ICCID is optional as it is pulled from the activated profile.

d. APN 2 is only entered for split/dual APN scenarios which are not yet supported.
e. eSIM Name is to help with identification of the profile if desired.

5. To manually add new eSIMs, enter the SN and EID, and click **Check Its SIMs**.

a. This displays the available eSIM profiles on your device. The first slot is reserved for the preloaded Verizon profile and cannot be deleted. Enter the mandatory fields (**ICCID** and **APN 1**) indicated by the red asterisks (*) to activate.
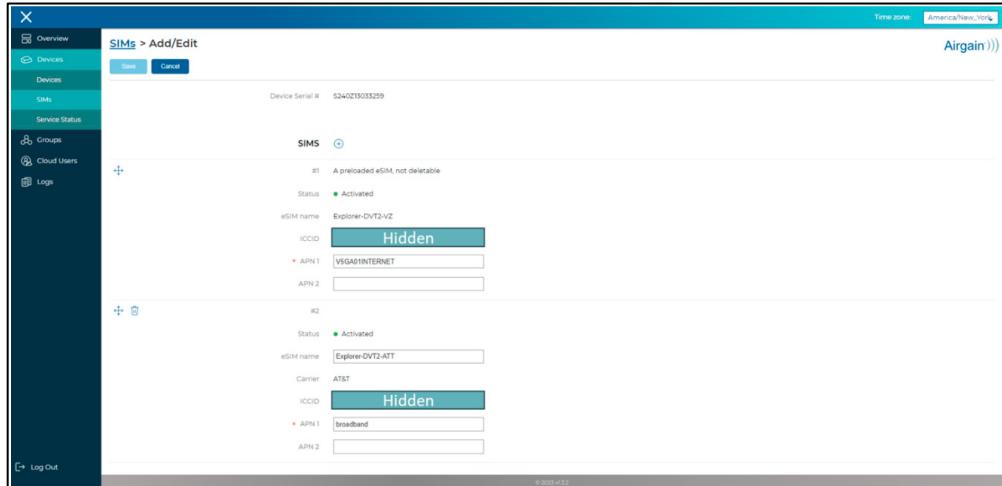

Figure 10 – Managing eSIM profiles.

6. To download eSIM profiles for other carriers, click the **+** icon next to SIMS and enter the mandatory fields (**Activation Code** and **APN 1**), indicated by the red asterisks (*).

    Note: Only four eSIM profiles are allowed at a time, including the preloaded Verizon profile.

7. If a profile fails download/activation it can then be updated and resubmitted.
8. Delete eSIM profiles if no longer needed to make space for other eSIM profiles.

    Notes:
    - Preloaded Verizon profile cannot be deleted.
    - Not available during Assigning, Downloading or Retry Downloading states.

9. Activated eSIM profiles allow for configuring APN(s) and desired eSIM name.
10. Prioritize eSIM profile connectivity by dragging to desired position.
11. Remember to click **Save** and then reboot the device for any changes to take full effect.

    Note: AC-Fleet requires rebooting twice for eSIM profile priority changes.

## 4.5 Bulk Update Device Firmware with Groups

Figure 11 – Group management screen.

1. All devices initially belong to the Default Group.
   a. Click **Add** to create a new Group.

Figure 12 – Adding a new Group.

2. Modify **Group Name** and **Description**.
3. Click **Edit** to transfer devices from the Default Group.
4. Select the last available firmware from the drop down and schedule for update.
5. After clicking **Save**, all devices in the group are updated as scheduled. You can use a similar process to bulk configure devices with config files.

5 Confirm Device Settings in Local GUI

5.1 Logging In

1. Refer to the product label attached to the Ethernet cable or device package label for relevant information.

a. IP address for accessing local GUI is **192.168.1.1**.
b. Username is **admin**.
c. Default admin password is listed after **admin/** (`fmbct7tkf7` in the example device package label shown in Section 2).
d. SSID and corresponding password for 2.4G and 5G Wi-Fi are on consecutive lines.

2. Establish a LAN or WLAN connection after booting up the device.

   a. LAN connection is available through the Ethernet cable exiting the device.
   b. WLAN connection is available over 2.4G or 5G Wi-Fi.
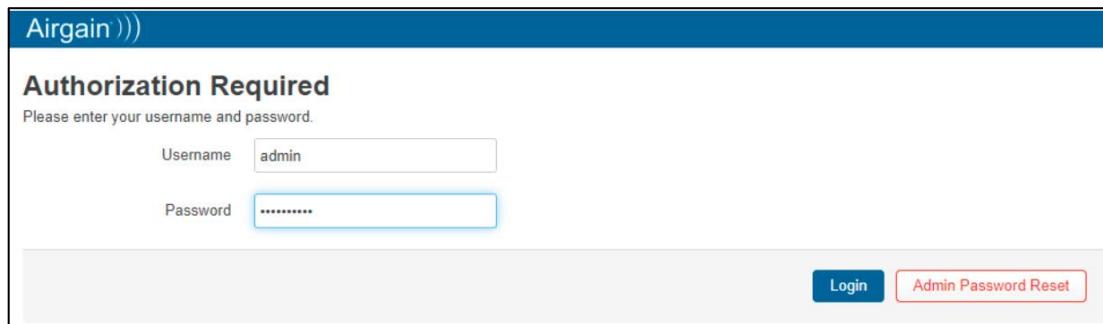
Figure 13 – Local device GUI login screen.

3. Enter the IP address into an internet browser to access the local GUI and log in.
   a. Username is set to **admin** by default.
   b. Enter the default admin password and click **Login**.
   c. Use **Admin Password Reset** to reset to default admin password.

5.2 Syncing with AC-Cloud

1. AC-Fleet automatically syncs with AC-Cloud after booting up, as long as the device is added to the customer organization account and has an active subscription.

   a. If booting up for the first time, AC-Fleet must download/activate an eSIM profile using the preloaded bootstrap profile or by connecting to Wi-Fi through Depot Mode.

      i. If the device is not added to the customer organization account or not subscribed when syncing with AC-Cloud, the bootstrap profile becomes inactive until a *Reset to default* is performed.
      ii. Depot Mode can only be enabled if the bootstrap profile fails to establish a connection as indicated by below pop-up notification.

eSIM Flow State

Initialization State: Currently, the bootstrap profile cannot establish Cellular WAN, please enable Depot Mode at Network/Wireless/Depot Mode Setting page with correct Access Point Name and Password to start profile downloading.

Confirm
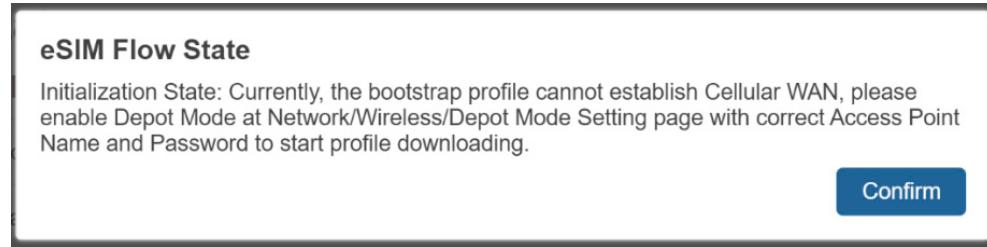
Figure 14 – Message shown when the bootstrap profile cannot connect.

Note: There is a known bug where the bootstrap can sometimes get stuck in a *Loading* status. Typically a reboot or *Reset to default* settings resolves the issue, or you can enable Depot Mode instead.

iii. Please allow up to 10 minutes for this initial syncing process to complete.
iv. The bootstrap profile goes dormant once an eSIM profile is connected.
v. Downloaded/activated eSIM profiles are visible in **Network > Cellular Settings**.

2. If updates are made to a device's eSIM configuration in AC-Cloud, a reboot is required for them to take effect.

   a. The device will continue cycling through all available eSIM profiles in order of priority until cellular connectivity is confirmed.

5.3 Status

1. **Overview**

Figure 15 – Status Overview screen.

2. **Cellular Status**

   a. **Profile**: Current eSIM profile; more details are available in **Cellular Settings**.
   b. **Status**: Current eSIM profile connectivity with corresponding details underneath.

      i. **Active** indicates the specified eSIM profile is in use.
      ii. **Loading** indicates the device is in the process of switching to a new eSIM profile.

iii. **Inactive** indicates the device failed to establish a cellular connection.

3. **System**
   a. Relevant device information and options for downloading GPS and System Logs.
      i. Confirm the **Firmware Version** matches last available from AC-Cloud.
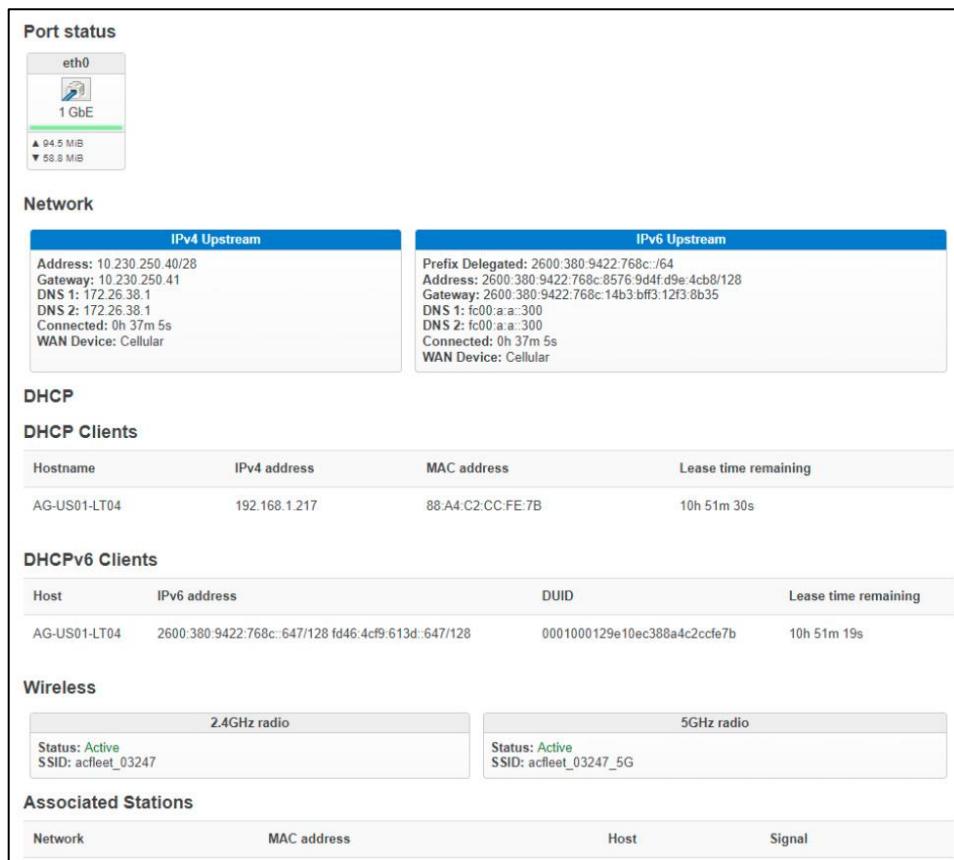
Figure 16 – Status Overview screen continued.

4. **Port status**: Relevant LAN information; hover the mouse over the bottom of the box for additional data.
5. **Network**:
   a. Internet Protocol (IP) address info for IPv4 and IPv6.
   b. WAN Device indicates if connected over cellular or WLAN if in Depot Mode.
6. **Dynamic Host Configuration Protocol (DHCP)**: Relevant information for device clients.
7. **Wireless**:
   a. **Active**: AC-Fleet is broadcasting as an Access Point.

Wireless	
2.4GHz radio	5GHz radio
Status: Inactive SSID: acfleet_03247	Status: Inactive SSID: acfleet_03247_5G

Figure 17 – SSID not available when in Depot Mode.

    b. **Inactive**: AC-Fleet is behaving as a client in Depot Mode.
8. **Associated Stations**: Relevant information for active clients.

5.4 System

1. **System Properties**
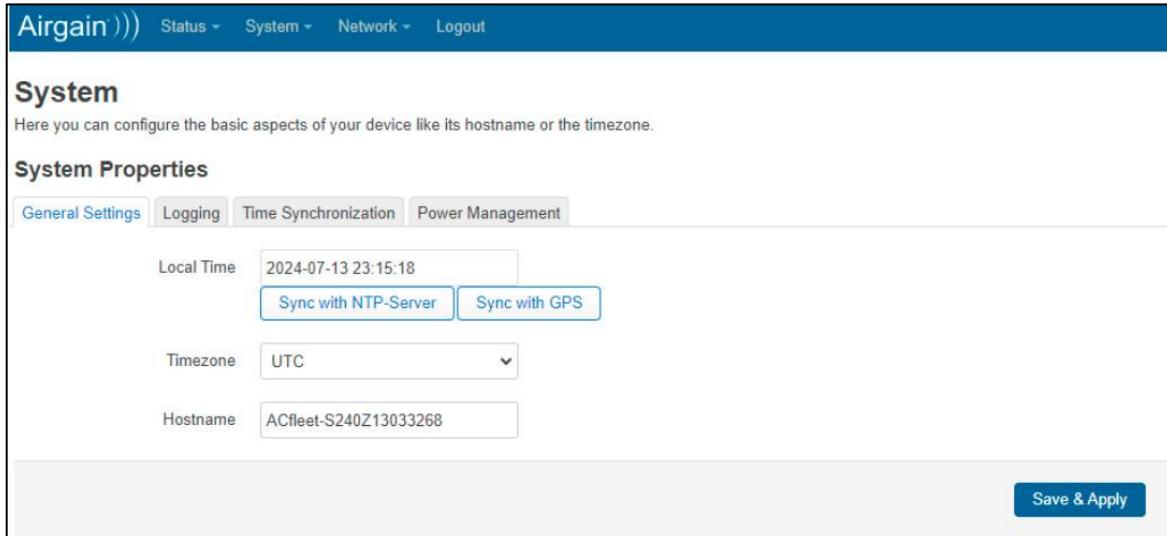
Figure 18 – System Properties screen – General Settings.

    a. **General Settings**:
        i. Select **Timezone** to configure the local time.

        Click **Sync with NTP-Server** or **Sync with GPS** to manually sync UTC time.

        ii. Option for configuring Hostname.
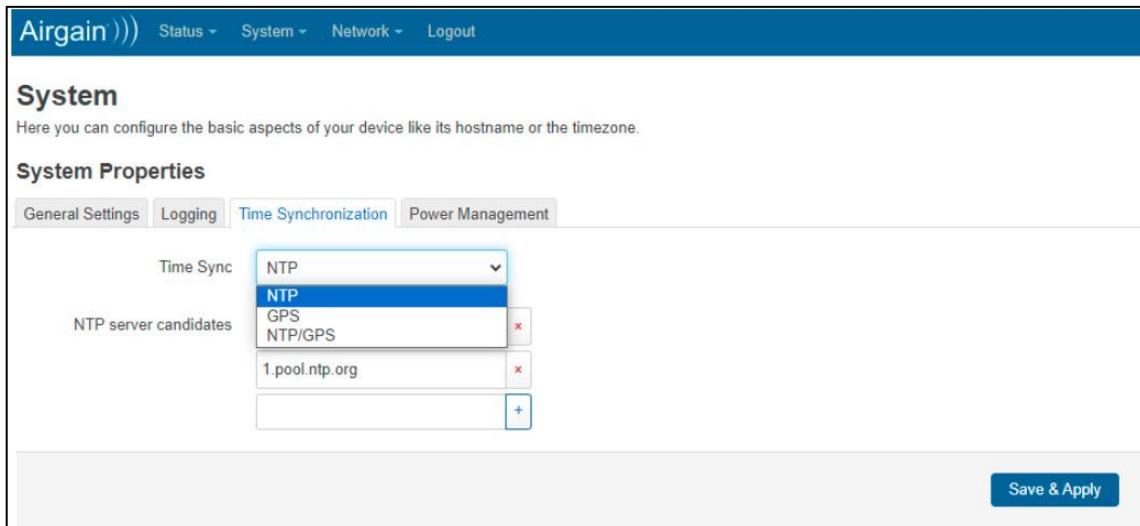
Figure 19 – System Properties screen – Time Synchronization settings.

b. **Time Synchronization**: Configure automatic UTC time synchronization to NTP or GPS.
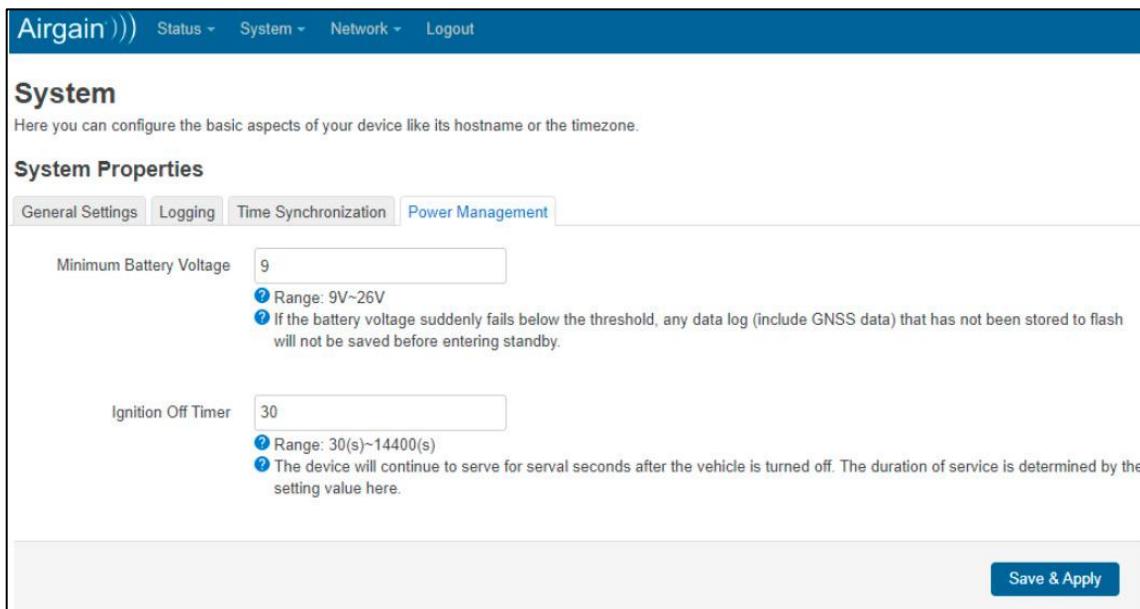
Figure 20 – System Properties screen – Power Management settings.

c. **Power Management**:
   i. **Minimum Battery Voltage**: Minimum voltage before AC-Fleet enters standby mode to avoid draining a low vehicle battery.
   ii. **Ignition Off Timer**: Length of time after the vehicle is turned off before AC-Fleet enters standby mode.

2. **Administration**

Figure 21 – Admin password configuration screen.

a. **Router Password**: Customize the admin password for accessing the local GUI.

Figure 22 – Reboot screen.

3. **Reboot**: Reboot the device to sync with AC-Cloud.

5.5 Network

1. **Wireless**

Figure 23 – Wireless management screen.

a. **SSID**: Click **Edit** to configure the SSID settings.
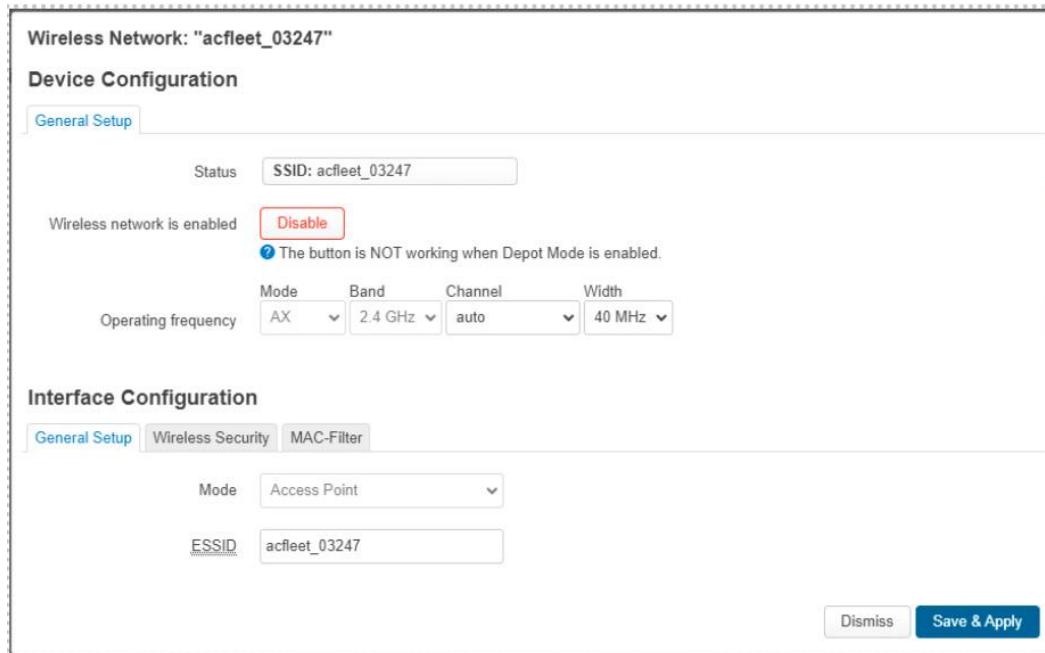
Figure 24 – SSID configuration settings.

b. **General Setup**: Customize the SSID in the **ESSID** field.
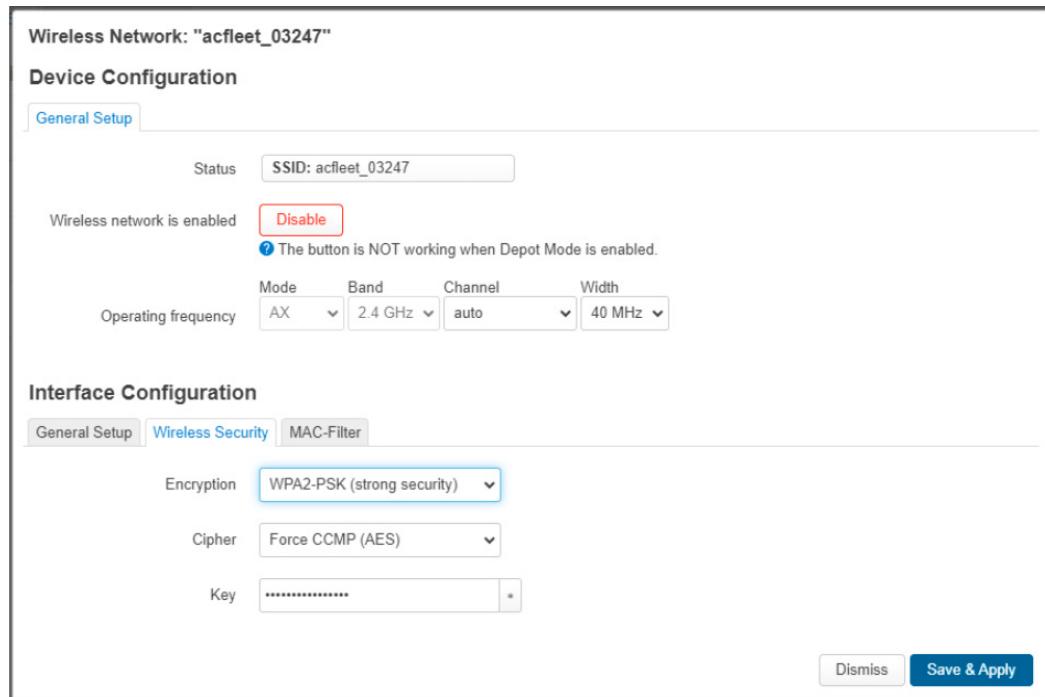
Figure 25 – Wireless Security settings.

c. **Wireless Security**: Customize the SSID password in the **Key** field.
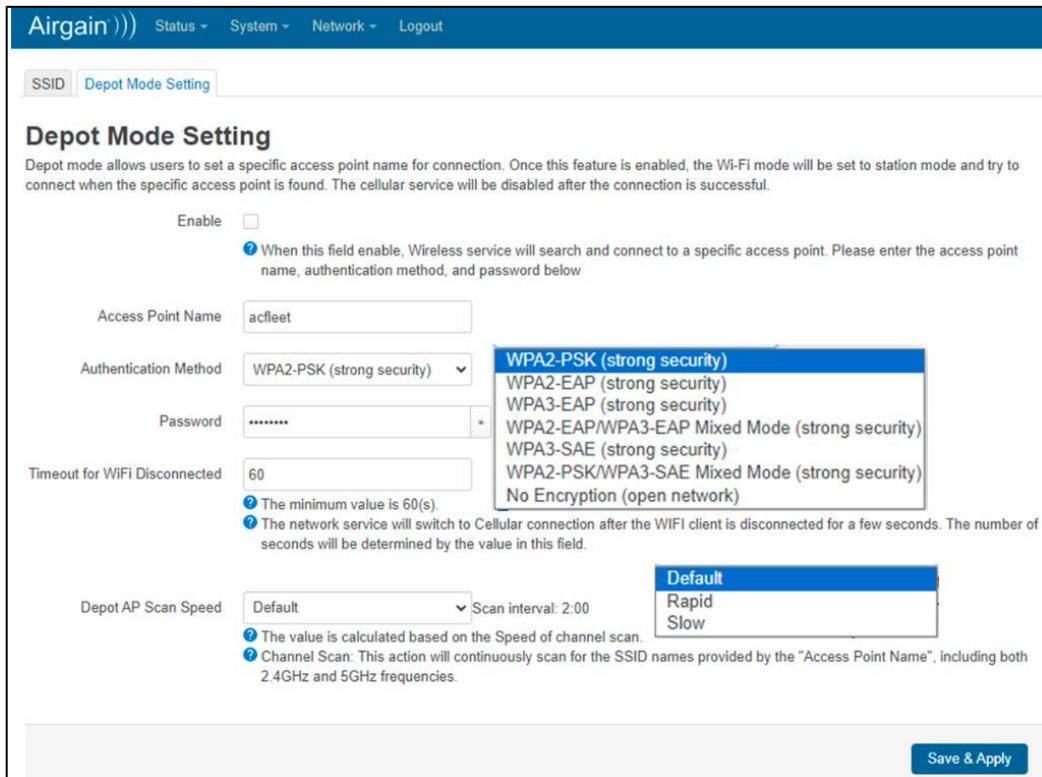
Figure 26 – Depot Mode settings.

2. **Depot Mode Setting**:

   a. Enable Depot Mode for AC-Fleet to automatically connect to a desired Wi-Fi Access Point (AP) once in range and disconnect once out of range.

      i. AC-Fleet temporarily loses WAN connectivity as it switches between cellular and Depot Mode.
      ii. SSID from AC-Fleet is disabled while in Depot Mode, except during initial syncing process.

   Notes:

   - Airgain recommends configuring Wi-Fi clients to also switch to the Depot Mode AP.
   - AC-Fleet cannot connect to a hidden AP.

   b. Configure the amount of time after losing connection to Depot Mode AP before switching to cellular network.
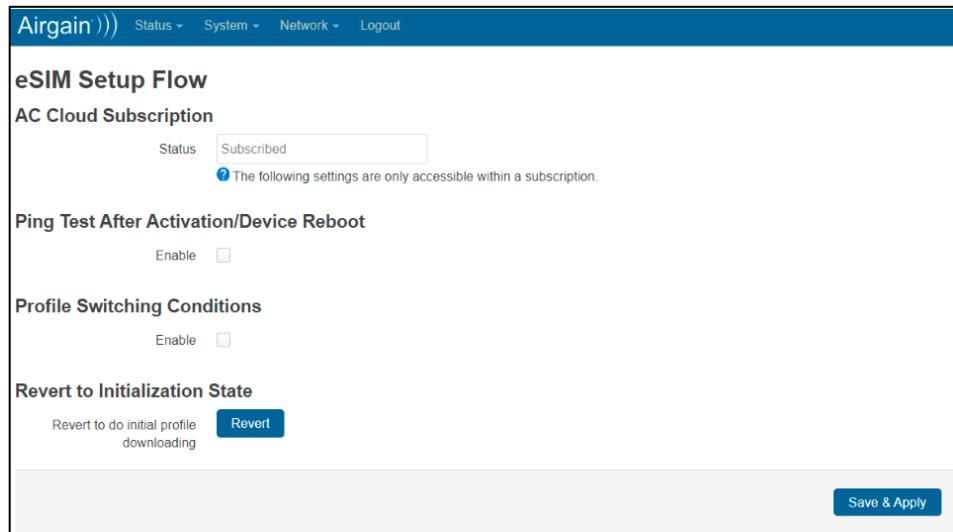
Figure 27 – eSIM Setup Flow screen.

3. **eSIM Setup Flow**:

   a. Enable **Profile Switching Conditions** to allow the device to automatically switch to the next priority eSIM profile if cellular connectivity is lost.
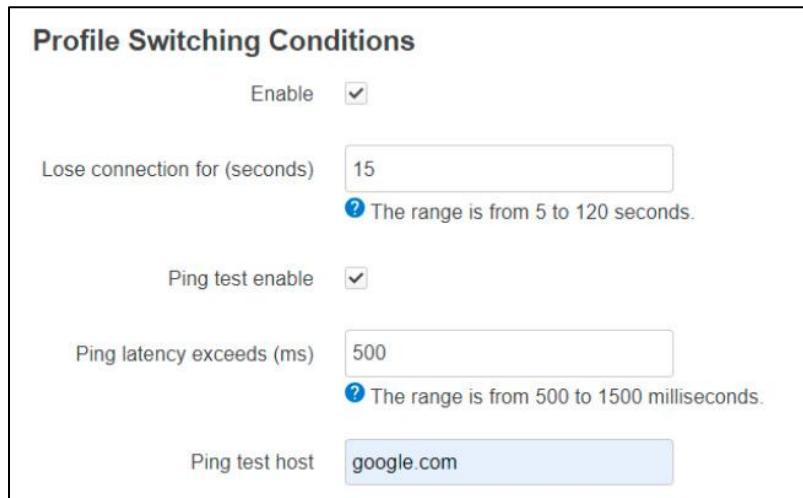

Figure 28 – Enable Profile Switching for automatic connection recovery.

      i. **Lose connection for (seconds):** Device checks for a loss of IP every five seconds and triggers a switch if the configured time limit is reached.

     ii. To enable a ping test, an eSIM profile must satisfy the ping test settings to confirm cellular connectivity.

        Note: A ping test host accepts IPv4, IPv6, or a hostname such as google.com.

6   Customer Support

For any questions, please contact Airgain Support:
connectivity.support@airgain.com