

AirgainConnect® Fleet™ 5G Vehicle Gateway User Guide

Airgain, Inc

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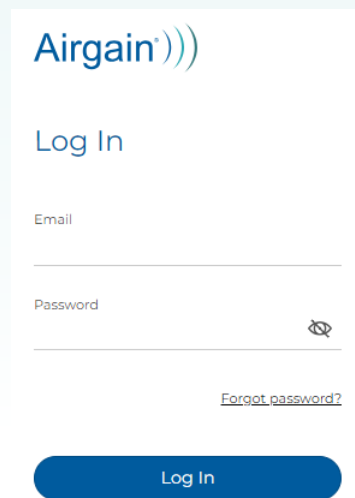
1. Introduction

The AC-Fleet 5G Vehicle Gateway is an integrated 5G modem, Wi-Fi 6 router, Gigabit Ethernet, and high-performance antenna solution designed for mounting to the roof of any vehicle. Please ensure the device is only installed by a professional following Airgain's installation instructions.

Local configuration of AC-Fleet is done using the device Graphical User Interface (GUI) with a LAN or WLAN connection, while remote configuration and management is available from AC-Cloud. This user guide provides an overview of the features and functionality for both. Please note that eSIM profiles must first be configured in AC-Cloud in order to be activated on a device.

2. AC-Cloud

a. Logging In

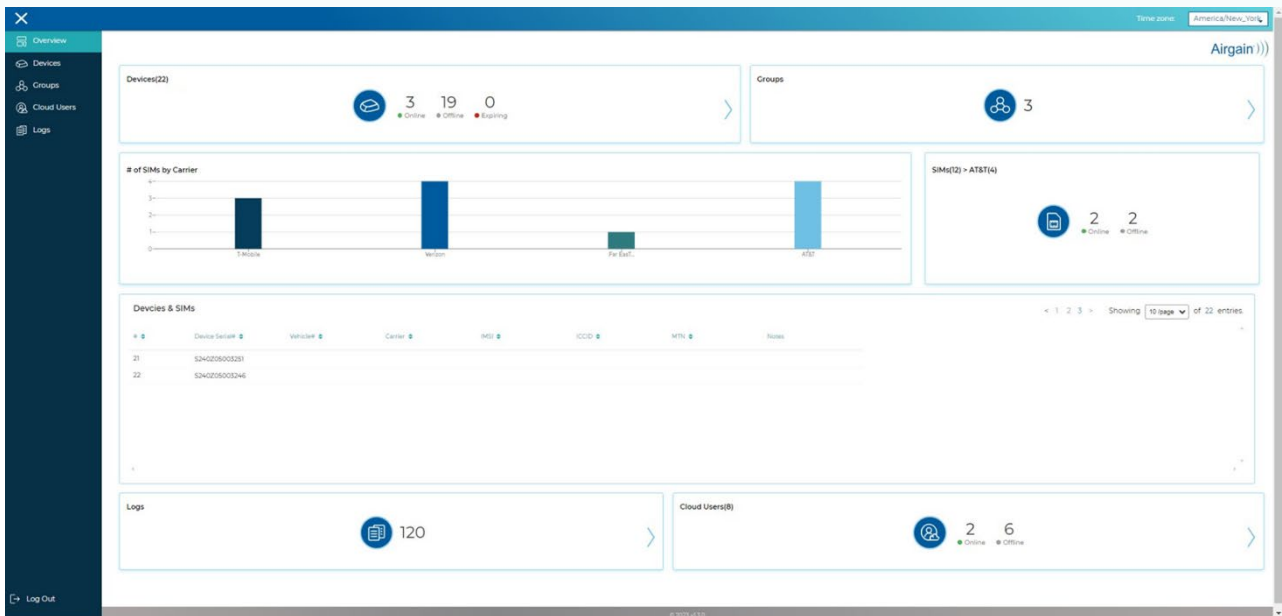


- i. Navigate to <https://ac-cloud.airgain.com/> in an internet browser.
- ii. Enter the email and password from your AC-Cloud activation email and click Log In.
 1. If your organization does not already have an AC-Cloud account, please contact support@airgain.com to request one be created and provide the following:
 - a. Organization name
 - b. Organization address
 - c. Admin name
 - d. Admin email address
 - e. Admin phone number
 2. If your organization already has an AC-Cloud account, please request that your admin grant you access.
- iii. Password can be changed by clicking on Forgot password?

b. Navigation

- i. AC-Cloud is organized into the following menus and configuration options:
 1. Overview
 2. Devices
 - a. Devices
 - b. SIMs
 - i. Add/Edit eSIM profiles
 - c. Service Status
 3. Groups
 - a. Groups
 - i. Schedule firmware and/or config file updates
 - b. Firmware
 - c. Config Files
 4. Cloud Users
 - a. Manage admin and user accounts
 - b. Notifications
 5. Logs

c. Overview

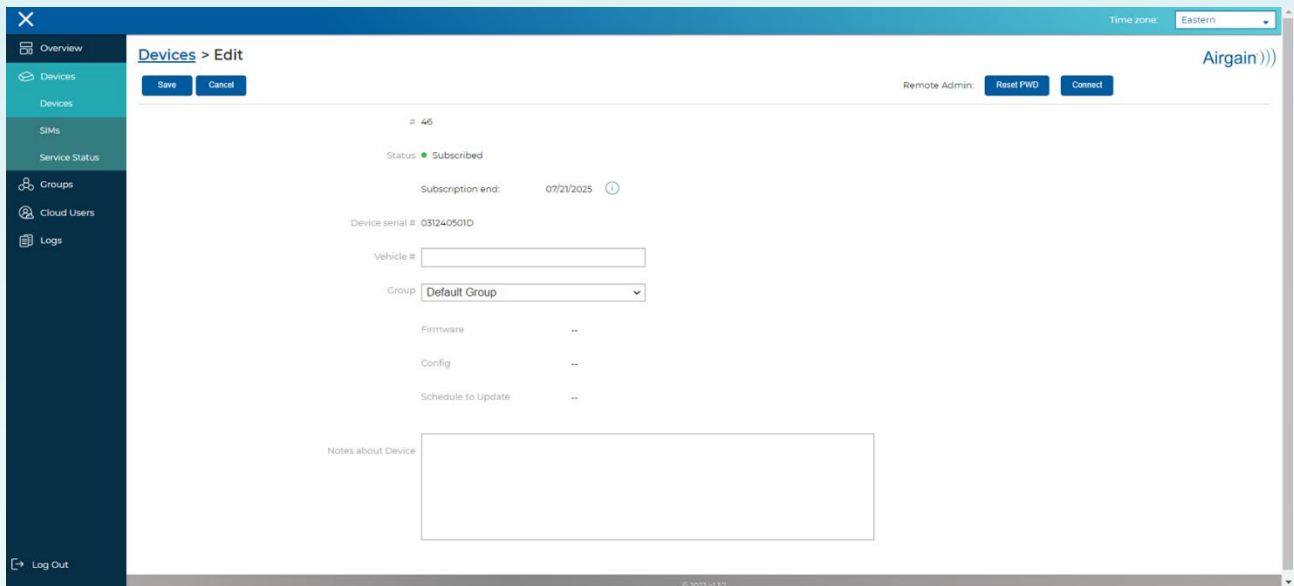


- i. Dashboard with summary of and access to the various AC-Cloud features.
 1. Only the most recently used eSIM info for each device will be displayed.

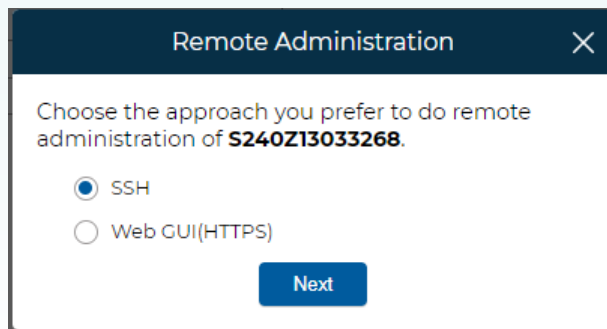
d. Devices

#	Service Status	Online Status	Device Serial#	Vehicle#	Group	Device Model	Uptime	Firmware	Config File	Notes
41	Subscribed	Offline	031240501Y		default	AC-Fleet	--	v03.01.02.0002_20240626	--(+)	
42	Subscribed	Offline	031240501U		default	AC-Fleet	--	v03.01.02.0002_20240626	--	
43	Subscribed	Offline	031240501F		default	AC-Fleet	--	v03.01.02.0002_20240626	--	
44	Subscribed	Online	031240501D		default	AC-Fleet	12h:6m:47s	v03.01.02.0003_0828	--	
45	Subscribed	Offline	031240501N		default	AC-Fleet	--	v03.01.02.0003_0805	--	
46	Subscribed	Offline	031240501C		default	AC-Fleet	--	v03.01.02.0003_0805	--	
47	Subscribed	Offline	031240501X		default	AC-Fleet	--	v03.01.02.0003_0805	--	
48	Subscribed	Offline	031240501T		default	AC-Fleet	--	v03.01.02.0003_0805	--	
49	Subscribed	Offline	031240501W		default	AC-Fleet	--	v03.01.02.0002_20240626	--	
50	Subscribed	Offline	031240501V		default	AC-Fleet	--	--	--(+)	

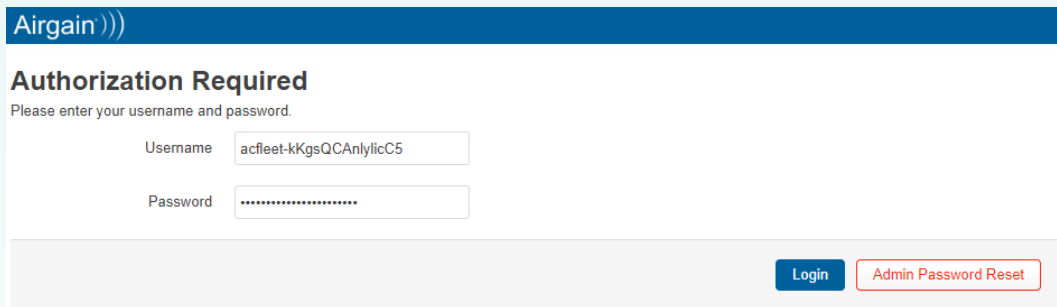
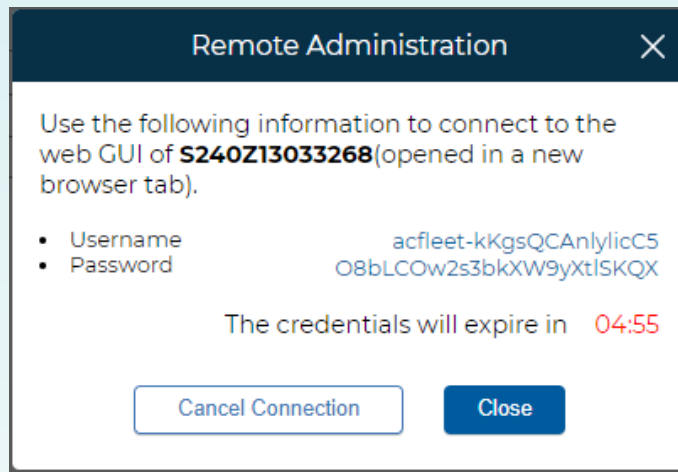
- i. Browse AC-Fleet devices that are registered to the organization's AC-Cloud account.
 1. If you need to have new devices added to your account, please contact support@airgain.com with organization name and a copy of the invoice.
 2. Service Status
 - a. **Subscribed** indicates the device has an active AC-Cloud subscription.
 - b. **Expiring** indicates the AC-Cloud subscription for this device will expire within 30 days, please contact support@airgain.com to renew.
 - c. **Not subscribed** indicates the AC-Cloud subscription has expired for this device and cannot be managed remotely, please contact support@airgain.com to renew.
 3. Online Status
 - a. **Online** indicates the device is connected to AC-Cloud.
 - i. Not if connected with bootstrap profile.
 - b. **Offline** indicates the device is not connected to AC-Cloud.
 - c. Updates in AC-Cloud can take up to 10 minutes.
 4. **Uptime** shows how long the device has been Online.
- ii. Click on a device serial number for configuration and remote management options.



- iii. Configure Group, Vehicle # and Notes.
- iv. Reset device password or connect to devices for remote access.

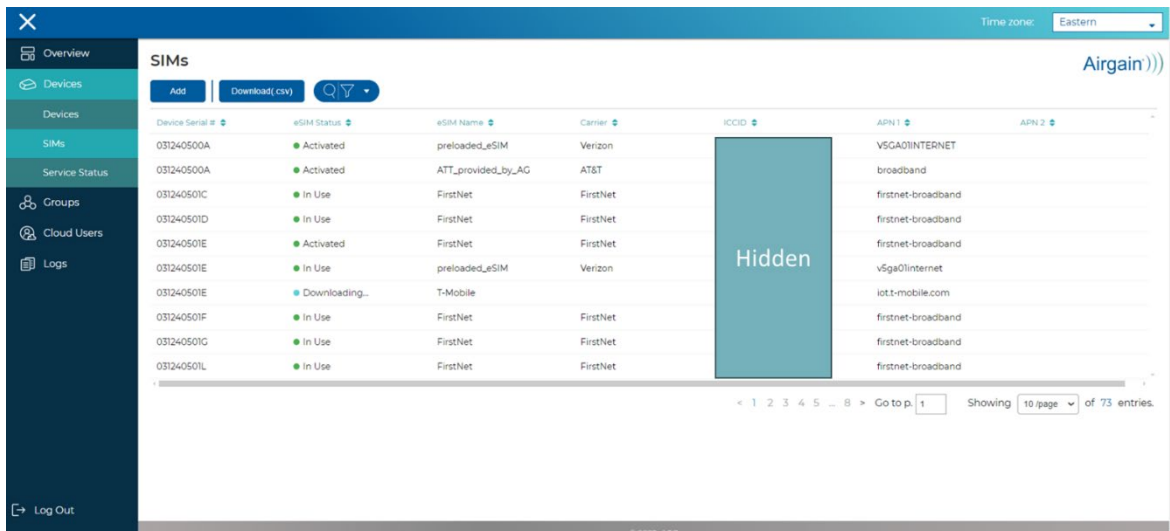


- v. Remote access options are SSH and HTTPS.
 - 1. SSH is only for Airgain support.



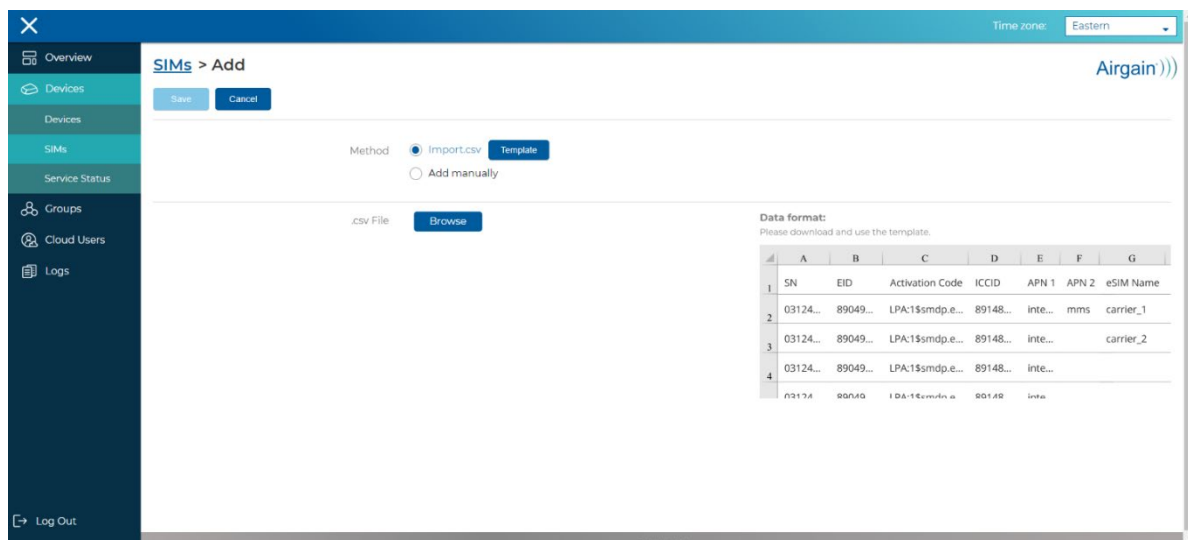
- vii. HTTPS will automatically open a new browser window with credentials entered for logging into local GUI remotely.
 1. Click Cancel Connection to end session.
 2. Session will expire automatically with inactivity.

e. SIMs

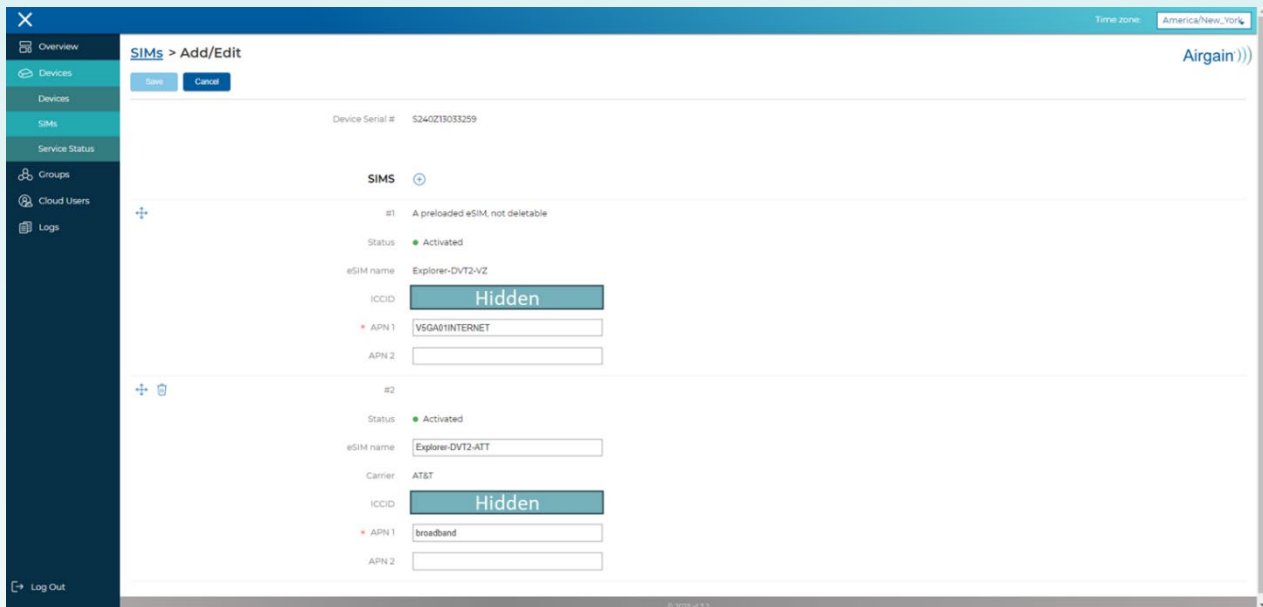


- i. Browse eSIM profiles that have been activated for each device.
 1. eSIM Status
 - a. **In Use** indicates the device is currently connected with this profile.
 - i. AC-Cloud will retain the last value reported by the device, so some profiles will show as In Use even when the device is offline.

- b. **Offline:** device is currently powered off.
- c. **Activated** indicates this profile is available for attempting cellular connection.
 - i. Does not mean that profile connectivity has been confirmed.
- d. **Assigning** indicates this profile has been submitted and is pending device reboot for download/activation.
- e. **Downloading** indicates the download/activation process has started for this profile.
 - i. The entire process of downloading and activating might take around 3 minutes.
- f. **Retry Downloading** indicates the previous download attempt failed and requires device reboot to try again.
- g. **Fail To Download** indicates this profile has reached its limit of 3 failed download attempts and would need to be resubmitted for download/activation.
- h. **Activating** is specific to the preloaded Verizon profile since downloading is not relevant and indicates the activation process has started.
 - i. **Fail To Activate** indicates the preloaded Verizon profile activation failed and would need to be resubmitted.
 - j. **Updating** indicates configuration changes have been made to this profile which require device reboot for implementation.
 - k. **Deleting** indicates this profile will be deleted from AC-Fleet upon next reboot.
- ii. Click on **Add** to configure a new device eSIM.
- iii. Click on a device SN for eSIM configuration options.
 - 1. Additional eSIM profiles can be added manually.



- iv. If clicking on Add, there is an option for bulk upload using csv template.
 1. Click on **Template** to download the Import.csv template and then **Browse** to upload.
 2. Bulk upload is only for adding new eSIM profiles, not for editing existing profiles.
 - a. The default priority list will reflect the order of entries in the csv file.
 3. Activating preloaded Verizon profile requires entering serial number (SN), EID, “preload” for Activation Code, ICCID and APN 1.
 - a. For bulk uploads it is recommended to copy the SN, EID and Verizon (VZ) ICCID info from the device csv file that will be provided with your purchase.
 - b. Ensure the VZ ICCID has an active data plan with Verizon beforehand.
 - i. Note there is a known bug where the ICCID cannot be fixed if entered incorrectly.
 - c. A default APN of **v5ga01internet** is typically used, but please confirm with Verizon.
 4. Downloading and activating all other profiles requires entering SN, EID, Activation Code and APN 1.
 - a. For bulk uploads it is recommended to copy the SN and EID info from the device csv file that will be provided with your purchase.
 - b. Please ensure an eSIM profile with active data plan has been assigned to the EID and confirm with T-Mobile which APN to connect with:
 - i. If connecting with APN **fast.t-mobile.com** then the Activation Code for downloading eSIM profiles is **LPA:1\$T-MOBILE.GDSB.NET\$**
 - ii. If connecting with APN **iot.t-mobile.com** then the Activation Code for downloading eSIM profiles is **LPA:1\$T-MOBILE.IDEMIA.IO\$**
 - c. AT&T and FirstNet use the same **LPA:1\$cust-001-v4-prod-atl2.gdsb.net\$** Activation Code for all data plans, please ensure an eSIM profile with active data plan has been assigned to the EID.
 - i. A default APN of **broadband** is typically used for AT&T and **firstnet-broadband** for FirstNet, but please confirm with AT&T.
 - d. ICCID is optional as it will be pulled from the activated profile.
 5. APN 2 would only be entered for split/dual APN scenarios which are not yet supported.
 6. eSIM Name is to help with identification of the profile if desired.
- v. Manually adding new eSIMs will require first entering SN and EID, followed by the remaining required information which is the same as above for bulk upload.
 1. The SN, EID and VZ ICCID are also located on product label and device package label.



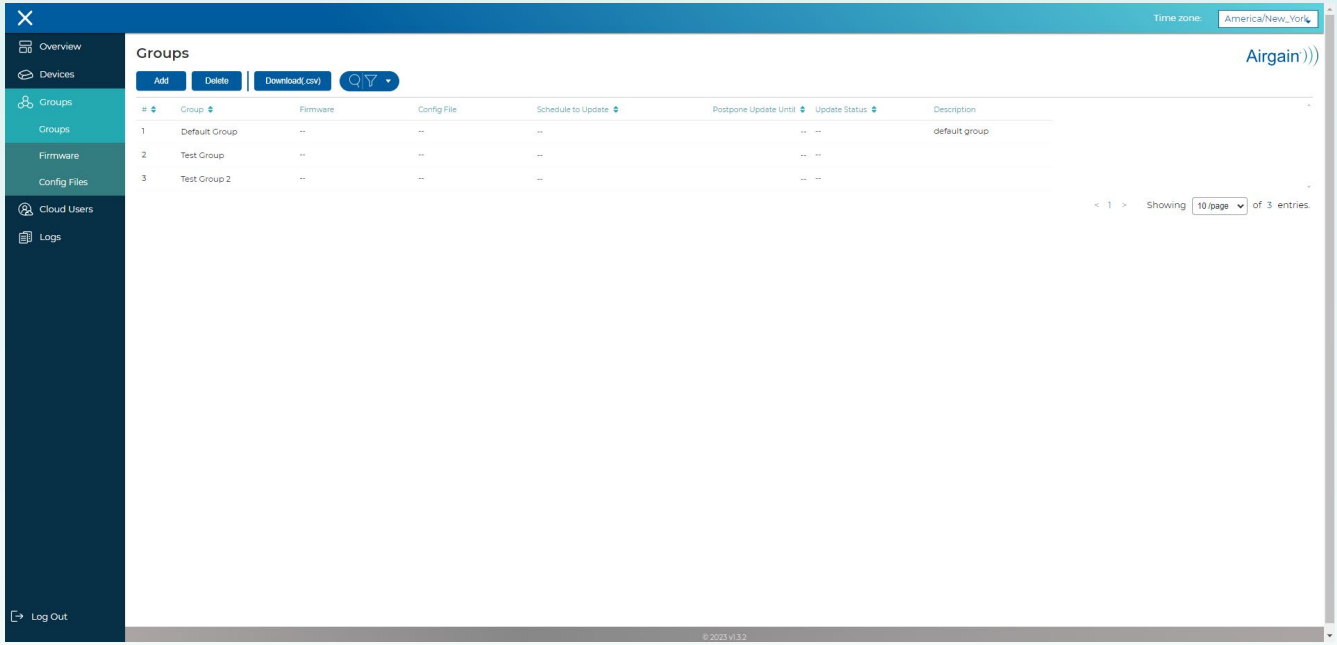
- vi. Click on the + button to manually add additional eSIM profiles with required information.
 - 1. Only 4 eSIM profiles are allowed at a time, including the preloaded Verizon profile.
- vii. If a profile fails download/activation it can then be updated and resubmitted.
- viii. Delete eSIM profiles if no longer needed to make space for other eSIM profiles.
 - 1. Preloaded Verizon profile cannot be deleted.
 - 2. Also not available during Assigning, Downloading or Retry Downloading.
- ix. Activated eSIM profiles allow for configuring APN(s) and desired eSIM name.
- x. Prioritize eSIM profile connectivity by dragging to desired position.
- xi. Remember to click **Save** and then reboot the device for any changes to take full effect.
 - 1. AC-Fleet will require rebooting twice for eSIM profile priority changes.

f. Service Status

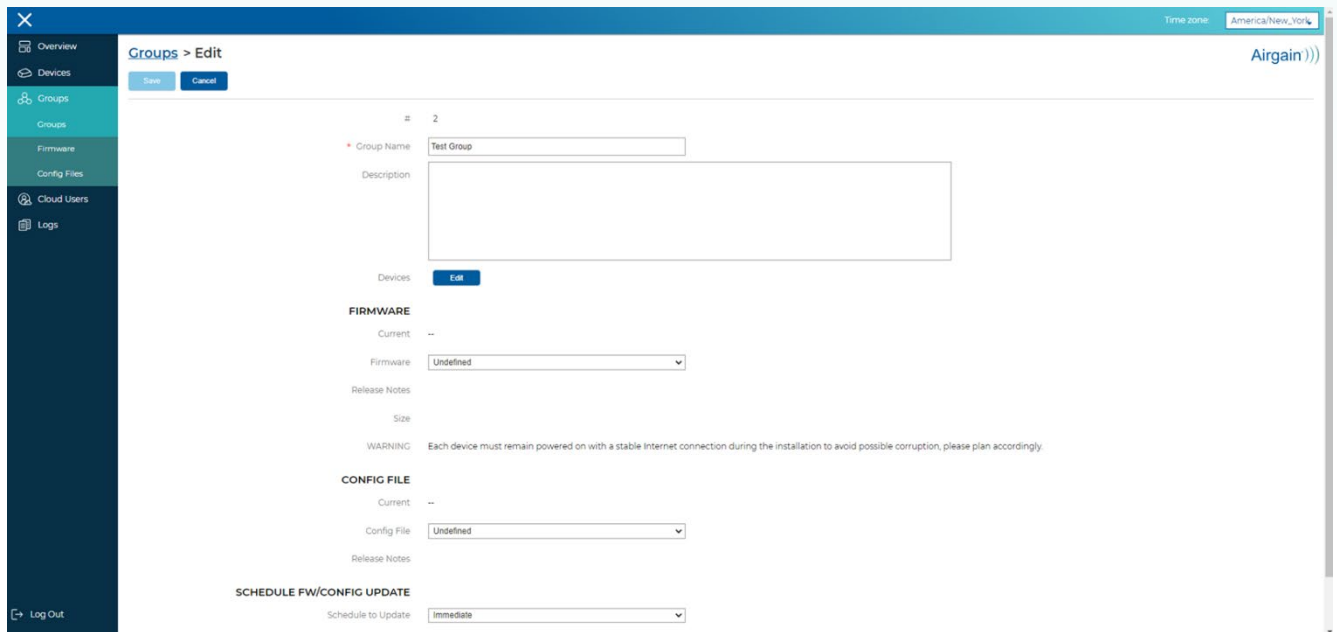
#	Service Status	Expiration Date	Device Serial #	Vehicle #	Device Model	Group
31	In Warranty	04/26/2025	S240213033259	-	-	default
32	In Warranty	07/02/2025	0322450501	-	-	default
33	In Warranty	04/25/2025	S240213033256	-	-	default
34	In Warranty	04/26/2025	S240213033100	-	-	default
35	In Warranty	07/02/2025	0322450503	-	-	default
36	In Warranty	04/25/2025	S240213033283	-	-	default
37	In Warranty	07/02/2025	0322450502	-	-	default
38	In Warranty	07/02/2025	0322450504	-	-	default
39	In Warranty	07/02/2025	0322450505	-	-	default
40	In Warranty	07/02/2025	0322450506	-	-	default

- i. Browse AC-Fleet devices for subscription status and expiration date.

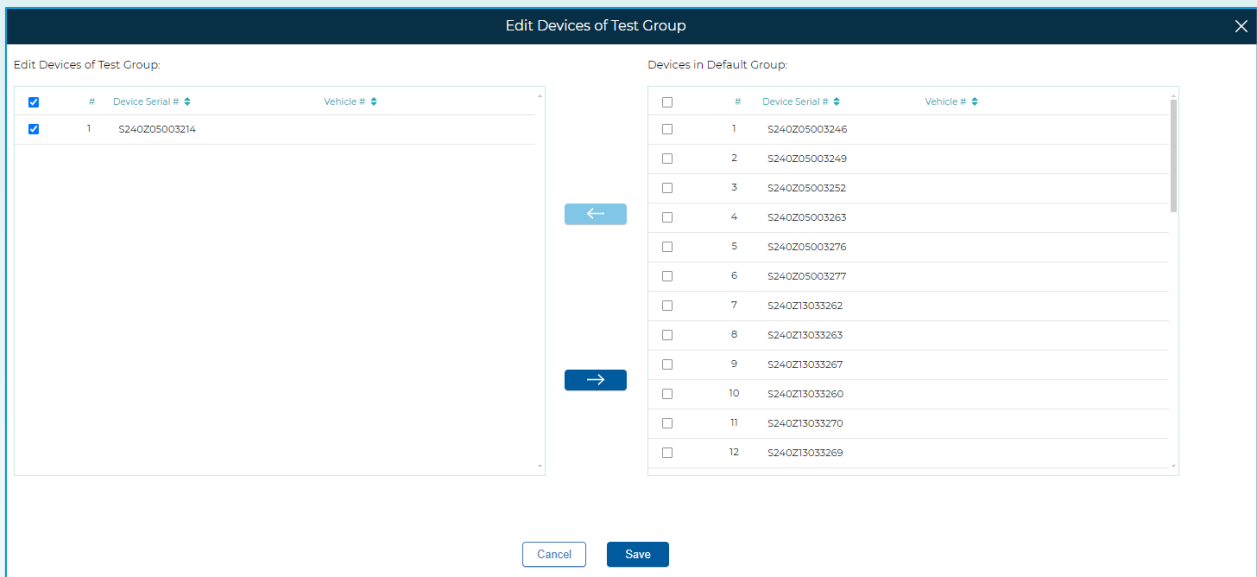
g. Groups



- i. Browse and manage Groups of AC-Fleet devices.
- ii. Click on a Group for configuration options.

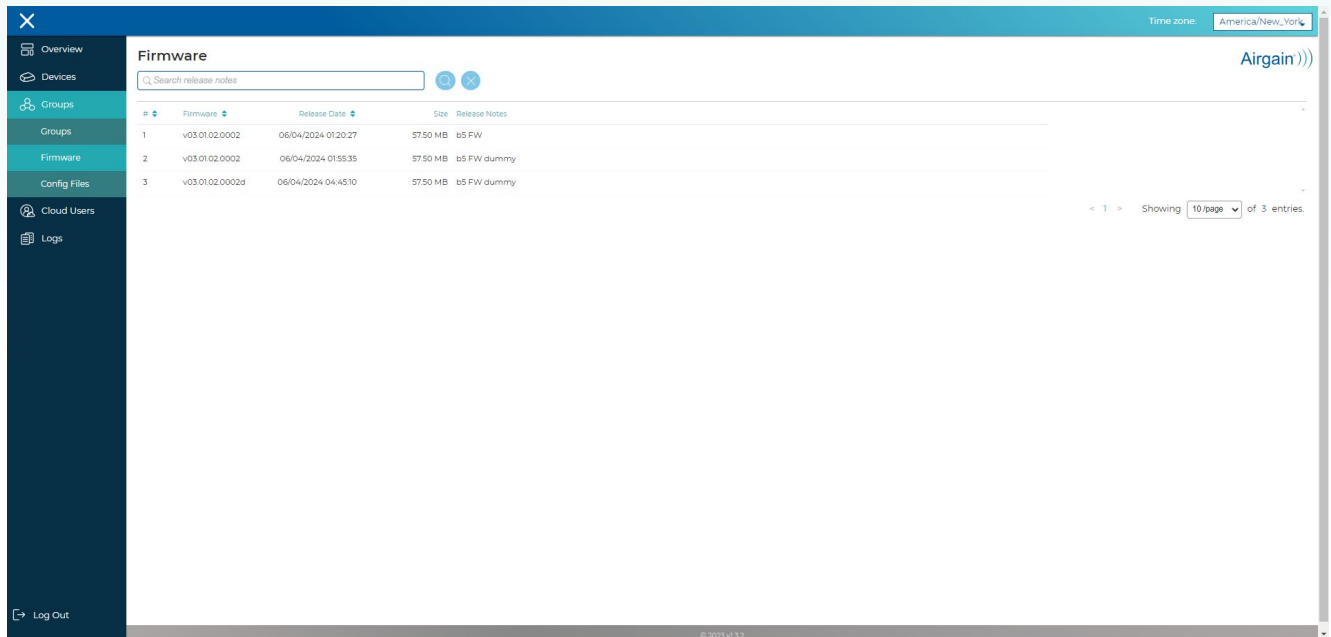


- iii. Modify Group Name and Description.
- iv. Select and schedule firmware and configuration file updates.



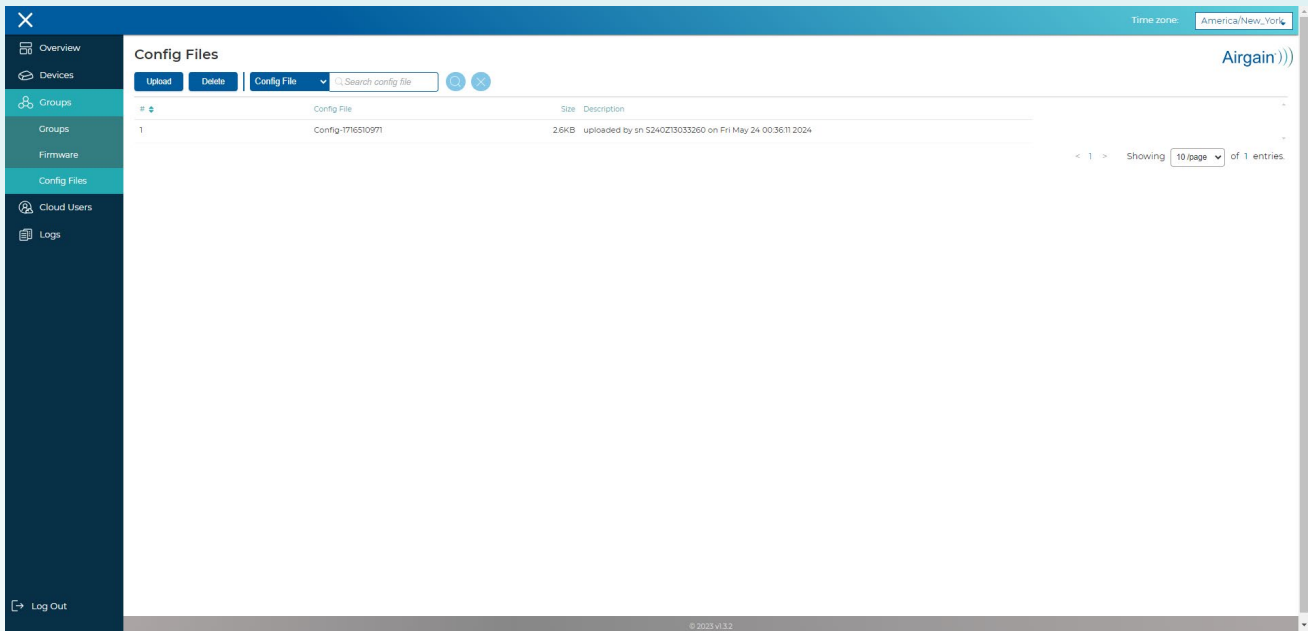
v. Move devices between Default Group.

h. Firmware



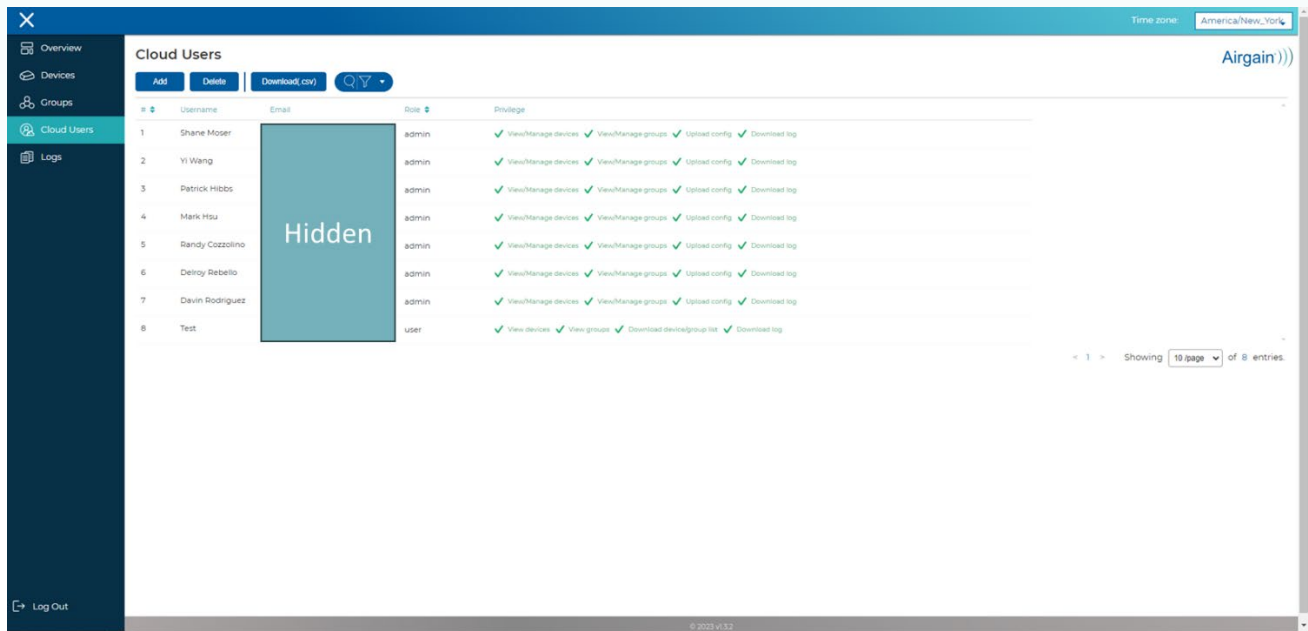
i. Browse available AC-Fleet firmware with links to release notes on <https://www.airgain.com/>.

i. Config Files

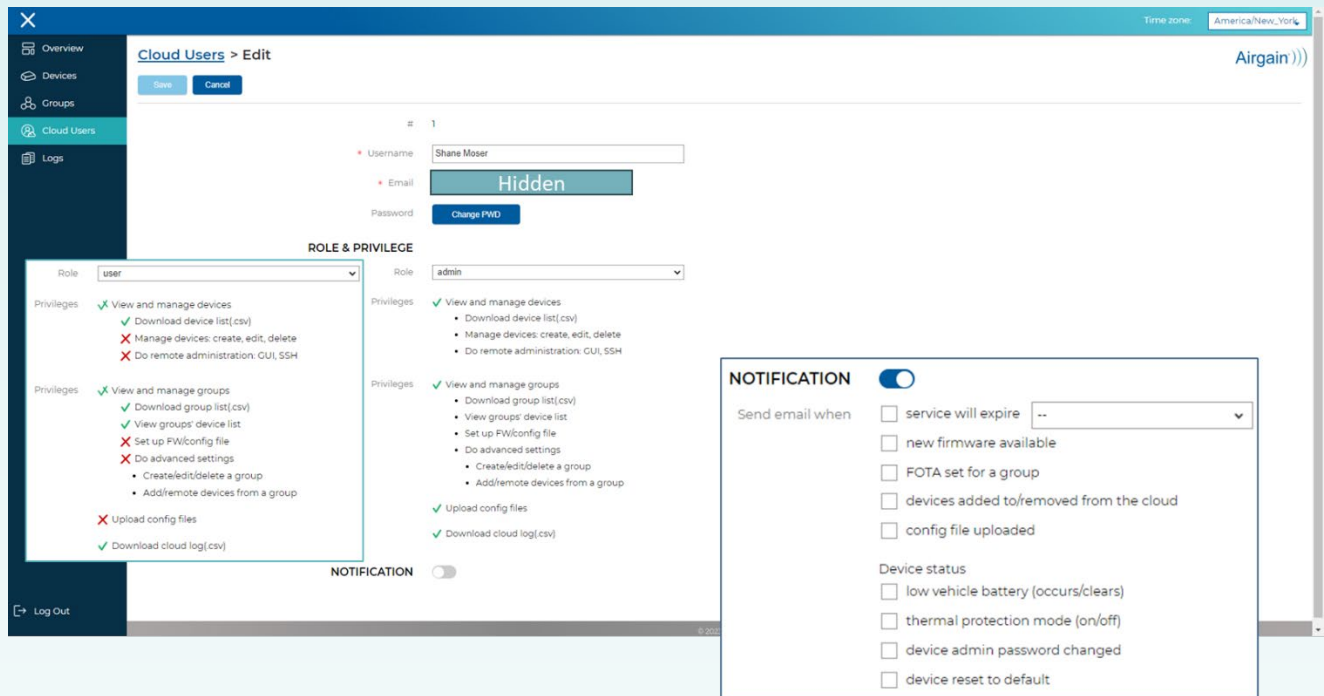


- i. Browse and upload AC-Fleet configuration files.

j. Cloud Users

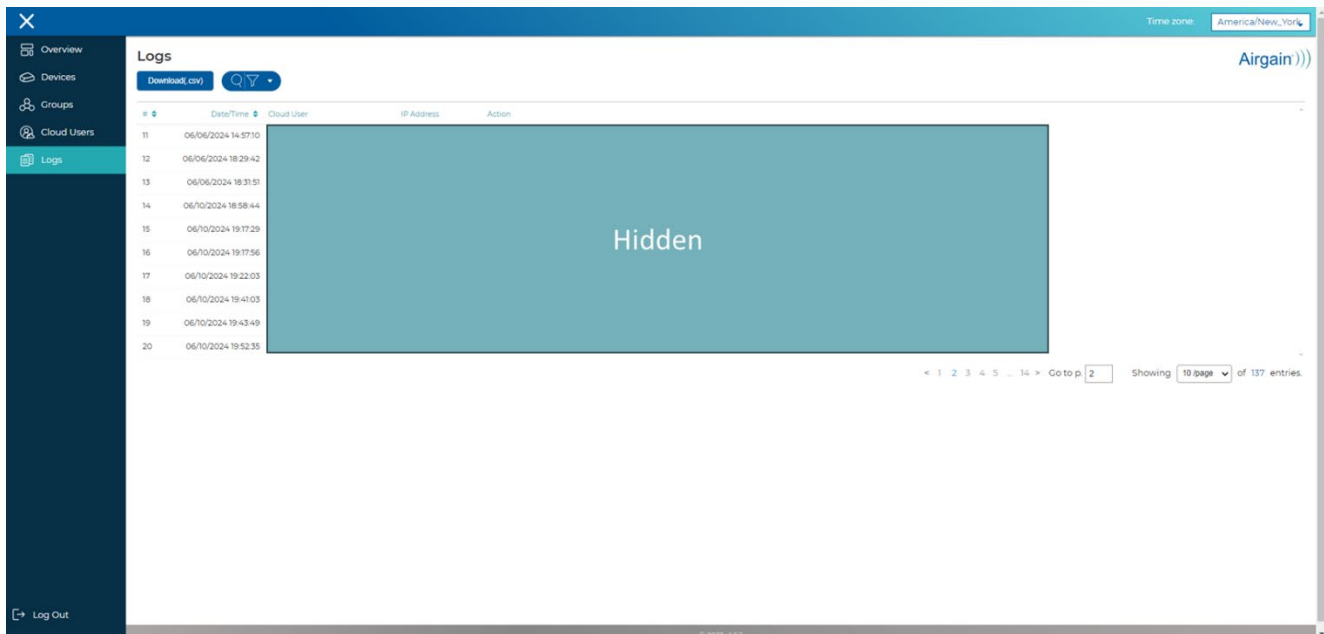


- i. Browse and manage AC-Cloud admin and user accounts.
- ii. Click on a username for configuration options.



- iii. Modify Username, Email and Password.
- iv. Select admin or user privileges.
 - 1. User role can only update their own password.
- v. Configure email notification settings.

k. Logs





- i. Browse available AC-Cloud event logs.

3. Local GUI

a. Logging In

Product Label

<p>www.airgain.com AirgainConnect® Fleet™ Model Name: CY-AF5G-B-NAT Input: 12-24V  2A IP67 & IP69K FCC ID: 2AVNXCYAF5G IC: 25852-CYAF5G Contains FCC ID: RI7FN990A28 Contains IC: 5131A-FN990A28 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. MADE IN TAIWAN</p>	<p>SN: 031YYMDDD  IMEI: XXXXXXXXXXXXXXXX EID: XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX VZ ICCID: XXXXXXXXXXXXXXXXXXXX LAN MAC: XXXXXXXXXXXX WiFi MAC: XXXXXXXXXXXX IP Address: 192.168.1.1 ID: admin/XXXXXXXXXX 2.4G SSID: acfleet_XXXXXX Password: XXXXXXXXXXXXXXXX 5G SSID: acfleet_XXXXXX_5G Password: XXXXXXXXXXXXXXXX</p>
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Device Package Label



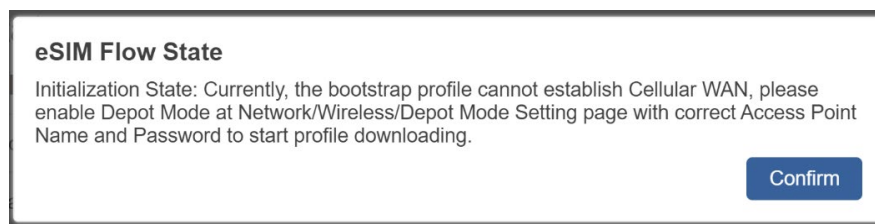
- i. Refer to the product label attached to the Ethernet cable or device package label for relevant information.
 1. IP address for accessing local GUI is **192.168.1.1**.
 2. Username is admin.
 3. Default admin password is listed after admin/ (fmbct7tkf7 in example device package label above).
 4. SSID and corresponding password for 2.4G and 5G Wi-Fi are on consecutive lines.

- ii. Establish a LAN or WLAN connection after booting up the device.
 1. LAN connection is available through ethernet cable exiting the device.
 2. WLAN connection is available over 2.4G or 5G Wi-Fi.

- iii. Enter the IP address into an internet browser to access the local GUI and log in.
 1. Username is set to admin by default.
 2. Enter the default admin password and press Login.
 3. Admin Password Reset is for resetting to default admin password.

b. Syncing with AC-Cloud

- i. AC-Fleet will automatically sync with AC-Cloud after booting up as long as the device is added to the customer organization account and has an active subscription.
 1. If booting up for the first time, AC-Fleet will need to download/activate an eSIM profile using the preloaded bootstrap profile or by connecting to Wi-Fi through Depot Mode.
 - a. Depot Mode can only be enabled if the bootstrap profile fails to establish a connection as indicated by below pop-up notification.
 - i. OTA firmware updates can also be performed if connected to W-Fi.



- b. Please allow up to 10 minutes for this initial syncing process to complete.
 - c. The bootstrap profile will go dormant once an eSIM profile is connected.
 - d. Downloaded/activated eSIM profiles will be visible in Network > Cellular Settings.
- ii. If updates are made to a device's eSIM configuration in AC-Cloud, a reboot will be required for them to take effect.
 1. The device will continue cycling through all available eSIM profiles in order of priority until cellular connectivity is confirmed.

c. Navigation

- i. The local GUI is organized into the following menus and configuration options:
 1. Status
 - a. Overview
 - i. GPS Log
 - ii. System Log
 - iii. Modem Log (visible in Advanced Mode)
 2. System
 - a. System Properties
 - i. General Settings
 1. Local Time
 2. Timezone
 3. Hostname
 - ii. Logging
 1. External system log server
 - iii. Time Synchronization
 1. NTP/GPS
 - iv. Power Management
 1. Minimum Battery Voltage
 2. Ignition Off Timer
 - b. Administration
 - i. Router Password
 - ii. User Account
 - iii. Advanced Mode
 - c. Backup / Flash Firmware
 - i. Backup
 - ii. Restore
 - iii. Flash new firmware
 - d. Reboot
 3. Network
 - a. IP Interfaces
 - b. Wireless
 - i. SSID
 1. General Setup
 2. Wireless Security
 3. MAC-Filter
 - ii. Depot Mode Setting

- c. Routing (visible in Advanced Mode)
 - i. Static IPv4 Route
 - ii. Static IPv6 Route
 - iii. IPv4 Policy Route
 - iv. IPv6 Policy Route
- d. GPS
 - i. Remote Server
 - ii. Sentence Type
- e. Diagnostics
 - i. Speedtest
 - ii. Modem (visible in Advanced Mode)
- f. Cellular Settings
- g. Firewall (visible in Advanced Mode)
 - i. General Settings
 - 1. Enable SYN-flood protection
 - 2. Drop invalid packets
 - 3. Zones
 - ii. Port Forwards
 - iii. Traffic Rules
- h. eSIM Setup Flow
 - i. AC-Cloud Subscription
 - ii. Ping Test After Activation/Device Reboot
 - iii. Profile Switching Conditions
- i. eSIM Profile Manage (visible in Advanced Mode)
- j. QoS (visible in Advanced Mode)
 - i. Classification Rules

d. Status

i. Overview

The screenshot shows the Airgain mobile status page. At the top, there is a navigation bar with 'Airgain)))', 'Status', 'System', 'Network', and 'Logout'. Below this is the 'Cellular Status' section, which contains a table with the following data:

Profile	eSIM Profile 2
Status	Active
IMSI	Hidden
ICCID	Hidden
EID	Hidden
IMEI	Hidden
Network Mode	AT&T
Country/Region	United States of America
Network	5G NSA
Band	LTE Band 14 (700/800 MHz) RSSI: -81 dBm SINR: 9 dB RSRP: -110 dBm RSRQ: -11 dB
Secondary Band(SCC1)	N/A
Secondary Band(SCC2)	N/A

Below the Cellular Status section is the 'System' section, which contains a table with the following data:

Hostname	ACfleet-S240Z13033268
Model	AC-Fleet
Firmware Version	v13.01.02.0005
Local Time	2024-09-23 20:42:05
GPS Log (Last 7 days)	Download
System Log (Last 7 days)	Download

ii. Cellular Status

1. Profile will indicate the current eSIM profile, with more details in Cellular Settings.
2. Status will indicate current eSIM profile connectivity with corresponding details underneath.
 - a. **Active** indicates the specified eSIM profile is in use.
 - b. **Loading** indicates the device is in the process of switching to a new eSIM profile.
 - c. **Inactive** indicates the device failed to establish a cellular connection.

iii. System

1. Relevant device information and options for downloading GPS and System Logs.

Port status

eth0

1 GbE

▲ 84.5 MIB

▼ 58.8 MIB

Network

IPv4 Upstream	IPv6 Upstream
Address: 10.230.250.40/28 Gateway: 10.230.250.41 DNS 1: 172.26.38.1 DNS 2: 172.26.38.1 Connected: 0h 37m 5s WAN Device: Cellular	Prefix Delegated: 2600:380:9422:768c::/64 Address: 2600:380:9422:768c:8576:9d4f:d9e:4cb8/128 Gateway: 2600:380:9422:768c:14b3:bff3:12f3:8b35 DNS 1: fc00:a:a::300 DNS 2: fc00:a:a::300 Connected: 0h 37m 5s WAN Device: Cellular

DHCP

DHCP Clients

Hostname	IPv4 address	MAC address	Lease time remaining
AG-US01-LT04	192.168.1.217	88:A4:C2:CC:FE:7B	10h 51m 30s

DHCPv6 Clients

Host	IPv6 address	DUID	Lease time remaining
AG-US01-LT04	2600:380:9422:768c::647/128 fd46:4cf9:613d::647/128	0001000129e10ec388a4c2ccfe7b	10h 51m 19s

Wireless

2.4GHz radio	5GHz radio
Status: Active SSID: acfleet_03247	Status: Active SSID: acfleet_03247_5G

Associated Stations

Network	MAC address	Host	Signal
---------	-------------	------	--------

- iv. Port status
 1. Relevant LAN information, hover mouse over bottom of box for additional data.
- v. Network
 1. Internet Protocol (IP) address info for IPv4 and IPv6.
 2. WAN Device will indicate if connected over Cellular or WLAN if in Depot Mode.
- vi. Dynamic Host Configuration Protocol (DHCP)
 1. Relevant information for device clients.
- vii. Wireless
 1. Active status indicates 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

- 2. Inactive status indicates AC-Fleet is behaving as a client in Depot Mode.
- viii. Associated Stations
 1. Relevant information for active clients.

e. System

i. System Properties

The screenshot shows the 'System Properties' page in the Airgain web interface. The 'General Settings' tab is selected. The page title is 'System' with a subtitle: 'Here you can configure the basic aspects of your device like its hostname or the timezone.' Below this, there are four tabs: 'General Settings', 'Logging', 'Time Synchronization', and 'Power Management'. The 'General Settings' tab contains the following fields: 'Local Time' (text input with value '2024-07-13 23:15:18'), 'Timezone' (dropdown menu with value 'UTC'), and 'Hostname' (text input with value 'ACfleet-S240Z13033268'). There are two buttons: 'Sync with NTP-Server' and 'Sync with GPS'. A 'Save & Apply' button is located at the bottom right.

1. General Settings

- a. Select Timezone to configure Local Time.
 - i. Click Sync with NTP-Server or Sync with GPS to manually sync UTC time.
- b. Option for configuring Hostname.

The screenshot shows the 'System Properties' page in the Airgain web interface, with the 'Logging' tab selected. The page title is 'System' with a subtitle: 'Here you can configure the basic aspects of your device like its hostname or the timezone.' Below this, there are four tabs: 'General Settings', 'Logging', 'Time Synchronization', and 'Power Management'. The 'Logging' tab contains the following fields: 'External system log server' (text input with value '0.0.0.0'), 'External system log server port' (text input with value '514'), and 'External system log server protocol' (dropdown menu with value 'UDP'). There are two informational icons (question marks) below the 'External system log server' field: 'The format of external log will be the same as local side.' and 'System log messages will be streamed to a specific IP address, which will be determined by this field.' A 'Save & Apply' button is located at the bottom right.

2. Logging

- a. Automatically export system logs to an external server when updated.

The screenshot shows the 'System' configuration page with the 'Time Synchronization' tab selected. The 'Time Sync' dropdown is set to 'NTP'. Below it, the 'NTP server candidates' list includes 'NTP', 'GPS', and 'NTP/GPS'. There is one server candidate entry: '1.pool.ntp.org'. A 'Save & Apply' button is located at the bottom right.

3. Time Synchronization

- a. Configure automatic UTC time synchronization to NTP or GPS.

The screenshot shows the 'System' configuration page with the 'Power Management' tab selected. The 'Minimum Battery Voltage' is set to '9'. Below this, there are two informational icons: a range of '9V~26V' and a note that data logs will not be saved if the voltage drops below the threshold. The 'Ignition Off Timer' is set to '30'. Below this, there are two informational icons: a range of '30(s)~14400(s)' and a note that the device will continue to serve for several seconds after being turned off. A 'Save & Apply' button is located at the bottom right.

4. Power Management

- a. Define Minimum Battery Voltage before AC-Fleet enters standby mode to avoid draining low vehicle battery.
- b. Configure Ignition Off Timer for how long after vehicle is turned off before AC-Fleet enters standby mode.

ii. Administration

The screenshot shows the 'Router Password' configuration page. It has a sub-tab 'Router Password' selected. The page title is 'Router Password' and the subtitle is 'Changes the administrator password for accessing the device'. There are two input fields: 'Password' and 'Confirmation', both with asterisks indicating they are required. A 'Save' button is located at the bottom right.

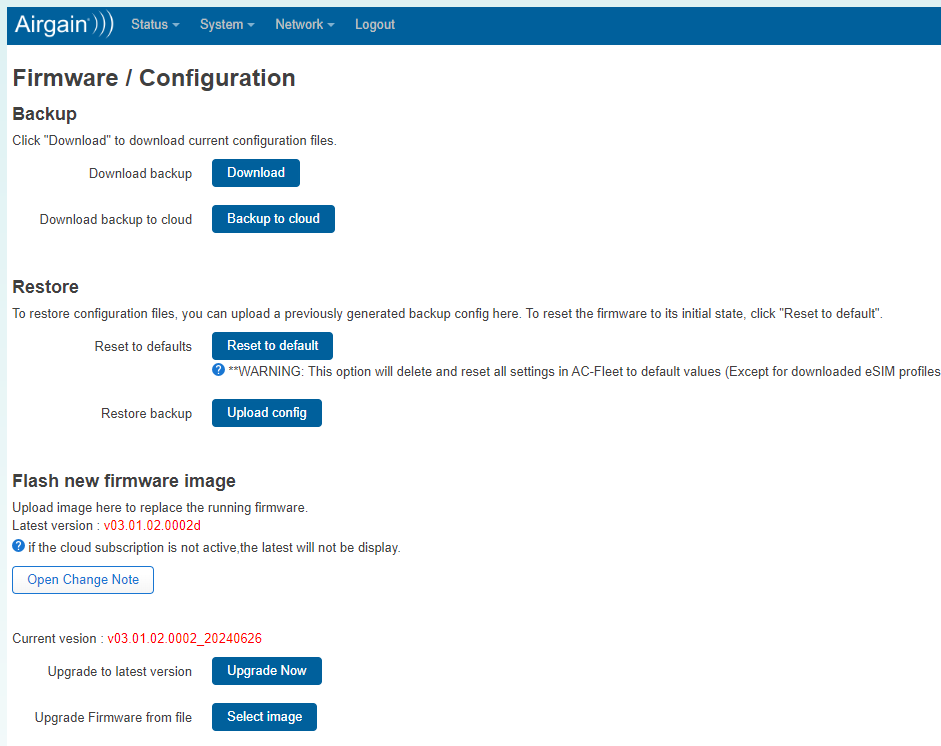
1. Router Password
 - a. Customize the admin password for accessing local GUI.

The screenshot shows the Airgain web interface. At the top, there is a navigation bar with the Airgain logo and menu items: Status, System, Network, and Logout. Below the navigation bar, there are three tabs: Router Password, User Account, and Advanced Mode. The 'User Account' tab is selected. The main content area is titled 'User Login Permission' and includes the subtitle 'Login permission for user account'. There is an 'Enable' checkbox which is currently unchecked. Below it, there is a link with a question mark icon that says 'Enable user account'. There are three input fields: 'Account' with the value 'user', 'Password' with a '*' character on the right, and 'Confirmation' with a '*' character on the right. At the bottom right of the form, there is a 'Save & Apply' button.

2. User Account
 - a. Configure a user account which only has access to Status Overview and Reboot.

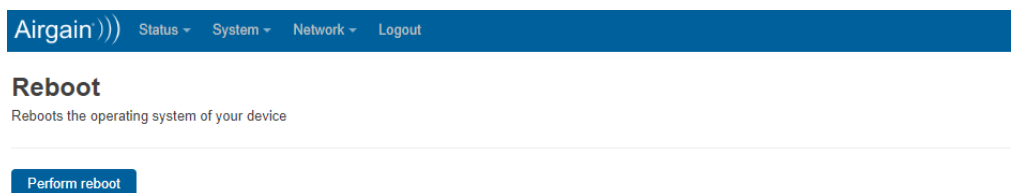
The screenshot shows the Airgain web interface. At the top, there is a navigation bar with the Airgain logo and menu items: Status, System, Network, and Logout. Below the navigation bar, there are three tabs: Router Password, User Account, and Advanced Mode. The 'Advanced Mode' tab is selected. The main content area is titled 'Advanced Mode' and includes the subtitle 'Switch to advanced Mode'. There is an 'Enable Advanced Mode' checkbox which is currently unchecked. Below it, there is a link with a question mark icon that says 'Advanced Mode will provide more device information and setting to configure'. At the bottom right of the form, there is a 'Save & Apply' button.

3. Advanced Mode
 - a. For accessing the following advanced gateway settings:
 - i. Modem information and logs
 - ii. Routing
 - iii. Firewall
 - iv. eSIM Profile Manage
 - v. Quality of Service



iii. Backup / Flash Firmware

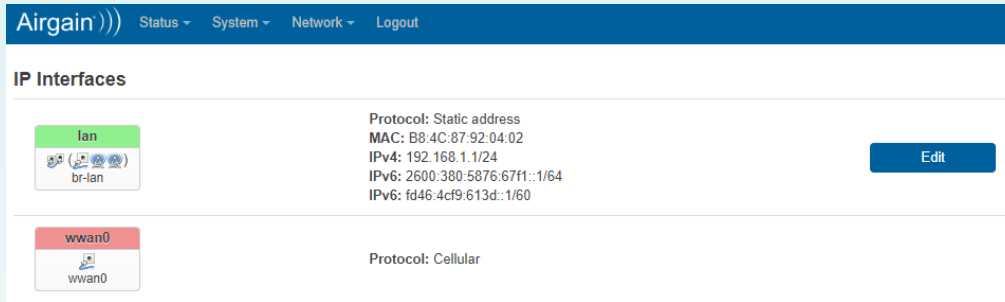
1. Backup
 - a. Download config files locally or to AC-Cloud.
2. Restore
 - a. Upload config files or reset device to default settings.
 - i. Reset to defaults will activate the bootstrap profile for the initial sync with AC-Cloud.
 - ii. Reset to defaults will not delete existing eSIM profiles, they can only be deleted from the device using AC-Cloud.
3. Flash new firmware image
 - a. **Upgrade Now** button will install the latest version from AC-Cloud.
 - i. Note there is a known bug where this option might be missing, please enable Advanced Mode for it to be visible.
 - b. **Select image** button is for uploading desired firmware locally.



iv. Reboot

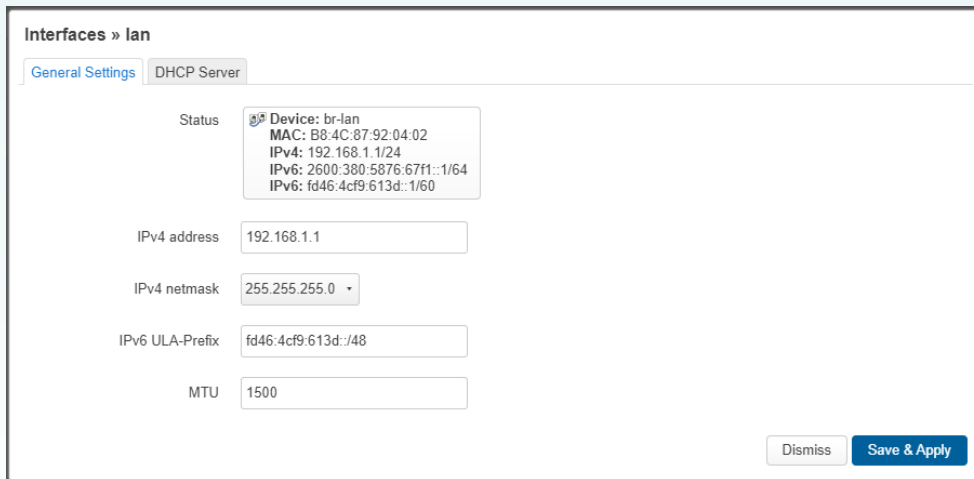
1. Reboot the device.

f. Network



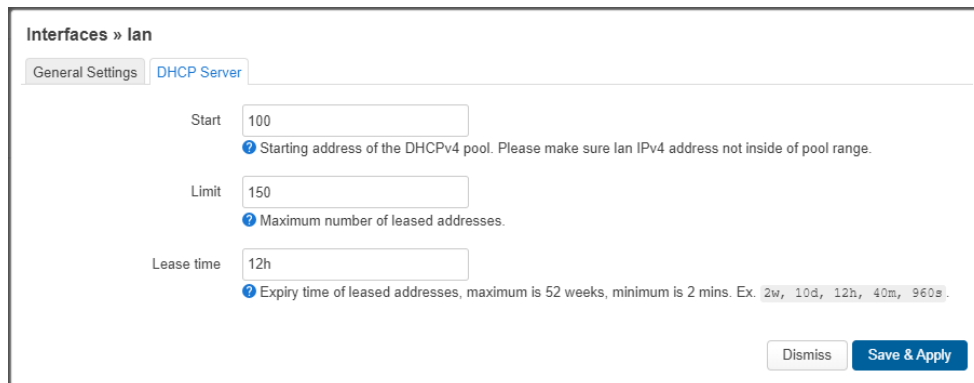
i. IP Interfaces

1. Relevant IP interface information and option for editing settings.



2. General Settings

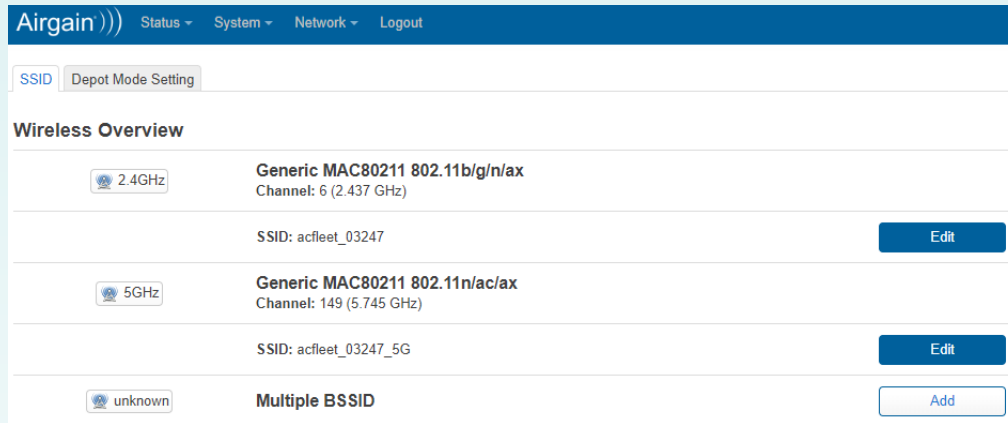
- a. Edit general settings.



3. DHCP Server

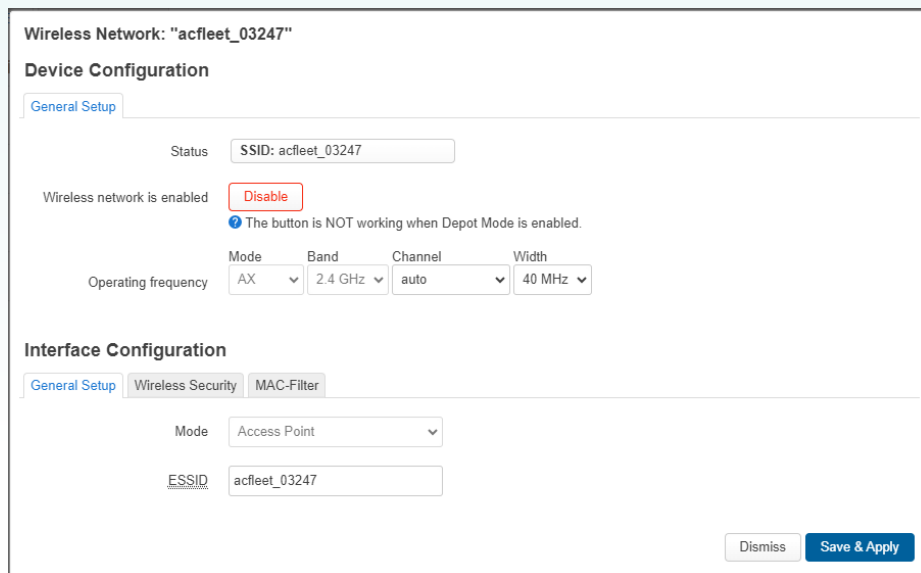
- a. Edit DHCP server settings.

ii. Wireless



1. SSID

- a. Configure existing SSID settings or additional SSID options.



b. General Setup

- i. Customize SSID and operating frequency.

Wireless Network: "acfleet_03247"

Device Configuration

General Setup

Status: SSID: acfleet_03247

Wireless network is enabled Disable

The button is NOT working when Depot Mode is enabled.

Operating frequency: Mode: AX, Band: 2.4 GHz, Channel: auto, Width: 40 MHz

Interface Configuration

General Setup | Wireless Security | MAC-Filter

Encryption: WPA2-PSK (strong security)

Cipher: Force CCMP (AES)

Key:

Dismiss Save & Apply

- c. Wireless Security
 - i. Customize SSID password and security settings.

Wireless Network: "acfleet_03247"

Device Configuration

General Setup

Status: SSID: acfleet_03247

Wireless network is enabled Disable

The button is NOT working when Depot Mode is enabled.

Operating frequency: Mode: AX, Band: 2.4 GHz, Channel: auto, Width: 40 MHz

Interface Configuration

General Setup | Wireless Security | MAC-Filter

MAC Address Filter: disable

- disable
- Allow listed only
- Allow all except listed

Dismiss Save & Apply

- d. MAC-Filter
 - i. Configure MAC Address filtering.

Airgain))) Status System Network Logout

SSID Depot Mode Setting

Depot Mode Setting

Depot mode allows users to set a specific access point name for connection. Once this feature is enabled, the Wi-Fi mode will be set to station mode and try to connect when the specific access point is found. The cellular service will be disabled after the connection is successful.

Enable

When this field enable, Wireless service will search and connect to a specific access point. Please enter the access point name, authentication method, and password below

Access Point Name

Authentication Method

- WPA2-PSK (strong security)
- WPA2-EAP (strong security)
- WPA3-EAP (strong security)
- WPA2-EAP/WPA3-EAP Mixed Mode (strong security)
- WPA3-SAE (strong security)
- WPA2-PSK/WPA3-SAE Mixed Mode (strong security)
- No Encryption (open network)

Password

Timeout for WiFi Disconnected

- The minimum value is 60(s).
- The network service will switch to Cellular connection after the WiFi client is disconnected for a few seconds. The number of seconds will be determined by the value in this field.

Depot AP Scan Speed Scan interval: 2:00

- Default
- Rapid
- Slow

- The value is calculated based on the Speed of channel scan.
- Channel Scan: This action will continuously scan for the SSID names provided by the "Access Point Name", including both 2.4GHz and 5GHz frequencies.

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 will temporarily lose WAN connectivity as it switches between cellular and Depot Mode.
 - ii. SSID from AC-Fleet will be disabled while in Depot Mode, except during initial syncing process.
 1. Wi-Fi clients will need to switch to the Depot Mode AP.
 - iii. Note that 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.
- c. Select how frequent AC-Fleet will scan for the Depot Mode AP.
 - i. Default interval is every 2 minutes.
 - ii. Rapid interval is every 1 minute.
 - iii. Slow interval is every 3 minutes.

Airgain))) Status System Network Logout

Routing

Routing defines over which interface and gateway a certain host or network can be reached.

Static IPv4 Route Static IPv6 Route IPv4 Policy Route IPv6 Policy Route

Static IPv4 Route

Interface	Target	Gateway	Disable
This section contains no values yet			

Add

Save & Apply

- iii. Routing (visible in Advanced Mode)
 1. Define IPv4 and IPv6 routing options.

Routing

General Settings

Interface: unspecified (dropdown) | lan: [icon] | wwan0: [icon]

Target: 0.0.0.0/0

Gateway: 192.168.0.1

Specifies the logical interface name of the parent (or master) interface this route belongs to

Network address

Specifies the network gateway. If omitted, the gateway from the parent interface is taken if any, otherwise creates a link scope route. If set to 0.0.0.0 no gateway will be specified for the route

Dismiss Save & Apply

2. Add a static route.

Routing

General Settings

Incoming interface: unspecified (dropdown) | lan: [icon] | wwan0: [icon]

Source: 0.0.0.0/0

Outgoing interface: unspecified (dropdown)

Destination: 0.0.0.0/0

Specifies the incoming logical interface name

Specifies the source subnet to match (CIDR notation)

Specifies the outgoing logical interface name

Specifies the destination subnet to match (CIDR notation)

Dismiss Save & Apply

3. Add a policy route.

iv. GPS

1. Stream GPS data to external platforms that support NMEA.
 - a. Host Name/IP for destination server is in the format IP Address:Port.
 - b. NMEA requires a static IP address to identify the device.
 - c. [Track Star](#) supports a custom AC-Fleet NMEA without need for static IP address.

v. Diagnostics

1. Confirm connectivity of AC-Fleet.

Airgain))) Status System Network Logout

Diagnostics Speedtest

Speedtest

Speedtest allows user to check network ability.

General Settings

Click "Start/Stop" to activate Speedtest or to stop Speedtest.

Speedtest time interval (2-60 minutes):

Start Speedtest action

Stop Speedtest action

History

Users can check the previous test results as follows. Up to 20 records will be kept at most. When the number of records exceeds 20, deletion will start from the oldest record, shutdown will clear the records. Please refer to the system log for the entire Speedtest results.

DATE/TIME	PING(ms)	Download rate(Mbps)	Upload rate(Mbps)	Location/Server	Service Provider	GPS record	Band
2024/07/10 18:01	84.207	59.50	16.24	Rochester, NY/University of Rochester	AT&T Wireless	2707.543436N/08010.369276W	5G Band n5 (850 MHz) RSSI:-79 dBm SINR:11.5 dB RSRP:-91 dBm RSRQ:-11 dB

2. Speedtest

- a. Automatically collects performance and location data at desired intervals.
 - i. Limited to 20 entries in local GUI.

Speed test start.

Speedtest DATE/TIME:2024/07/10 21:41,PING:79.047,

Speedtest DATE/TIME:2024/07/10 21:43,PING:68.621,

Speed test end.

- b. Search for Speedtest in system log to see full results.

Airgain))) Status System Network Logout

Diagnostics Speedtest Modem

Modem

Model	FN990A28
Firmware Version	A0R.000033-9023

Modem Log

3. Modem (visible in Advanced Mode)

- a. Modem information as well as options for capturing and downloading Modem Logs.

The screenshot displays the 'Cellular Settings' page in the Airgain interface. At the top, there are navigation links for 'Status', 'System', 'Network', and 'Logout'. The main content area is divided into two sections: 'Cellular Settings' and 'eSIM Profile 1' / 'eSIM Profile 2'. In the 'Cellular Settings' section, there are checkboxes for 'IP Passthrough' and 'Reply to ICMP Ping'. Below these are fields for 'DNS Servers' (set to 'Dynamic'), 'MTU (Maximum Transmission Unit)' (set to '1500'), and 'DNS Servers' (set to 'Static'). A red box highlights the 'DNS Servers' section, which includes fields for 'IPv4 Primary DNS Server' and 'IPv4 Secondary DNS Server'. In the 'eSIM Profile 1' section, there are fields for 'Priority' (set to '1'), 'ICCID' (set to '89148000010397431271'), 'Carrier' (set to 'Verizon'), 'Name' (set to 'preloaded_eSIM'), 'Authentication' (set to 'NONE'), 'Cellular Operation' (set to 'Auto(LTE/NR5G-NSA/NR5G-S)'), 'APN Operator Setting' (set to 'Custom'), 'Data Roaming' (checkbox), 'APN' (set to 'V5GA01INTERNET'), 'SIM PIN', and 'Confirm PIN'. A dropdown menu is open for 'Cellular Operation', showing options: 'Auto', 'CHAP Only', 'PAP Only', 'NONE', 'Auto(LTE/NR5G-NSA/NR5G-SA)', '5G Only (NR5G-SA)', and 'LTE Only (LTE)'. A 'Save & Apply' button is located at the bottom right of the page.

vi. Cellular Settings

1. Certain settings are universal and will be applied for all cellular connectivity.
 - a. **IP Passthrough** can be enabled for assigning to the first IP-requesting host.
 - b. **Reply to Internet Control Message Protocol (ICMP) Ping** can be enabled for reporting errors and performing network diagnostics.
 - c. **Domain Name System (DNS) Servers** is set to Dynamic by default to keep the domain name associated with an ever-changing IP address.
 - i. Change to Static if using a static IP address and enter DNS server(s).
 - d. **Maximum Transmission Unit (MTU)** size of WAN interface is fixed at 1500 bytes.
2. Each downloaded/activated eSIM profile will have its own tab and settings.
 - a. **Priority, Name** and **APN** can only be updated from syncing with AC-Cloud.
 - b. **ICCID, Carrier** and **APN Operator Setting** are fixed.
 - c. **Authentication** can be enabled for extra security.
 - d. **Cellular Operation** is set to Auto by default with options for 5G only and LTE only.
 - e. **Data Roaming** can be enabled for roaming to other network operators.
 - f. **SIM PIN** can be entered if needed.

3. After rebooting the device, changes cannot be made to cellular settings until after the syncing process with AC-Cloud is completed.
 - a. If changes are needed in order to establish a cellular connection, then try enabling Depot Mode to complete the syncing process.

vii. Firewall (visible in Advanced Mode)

Firewall - Zone Settings
The firewall creates zones over your network interfaces to control network traffic flow.

General Settings

Enable SYN-flood protection
 Enable this option to defend against SYN flood denial-of-service attacks

Drop invalid packets

Input: reject (dropdown menu open showing: reject, drop, accept)

Output: accept

Forward: reject

Zones

Zone ⇒ Forwardings	Input	Output	Forward
ipp ⇒ wan	ACCEPT	ACCEPT	ACCEPT
lan ⇒ wan	ACCEPT	ACCEPT	ACCEPT
wan ⇒ wan	REJECT	ACCEPT	REJECT

Save & Apply

1. General Settings
 - a. Enable protection from SYN flood denial-of-service attacks.
 - b. Configure invalid packet drop parameters.
 - c. Define Zones.

Firewall - Port Forwards
Port forwarding allows remote computers on the Internet to connect to a specific computer or service within the private LAN.

Port Forwards

Name	Match	Action	Enable
This section contains no values yet			

Add

Save & Apply

2. Port Forwards
 - a. Configure port forwarding.

Firewall - Port Forwards - Unnamed forward

General Settings

Name: Unnamed forward

Protocol: TCP | UDP

External port:

Internal IP address: any

Internal port: any

Any
 TCP
 UDP
 ICMP

Match incoming traffic directed at the given destination port or port range on this host
 Redirect matched incoming traffic to the specified internal host
 Redirect matched incoming traffic to the given port on the internal host

Dismiss Save & Apply

b. Add/Edit port forwarding.

Airgain))) Status System Network Logout

General Settings Port Forwards Traffic Rules

Firewall - Traffic Rules

Traffic rules define policies for packets traveling between different zones, for example to reject traffic between certain hosts or to open WAN ports on the router.

Traffic Rules

Name	Match	Action	Enable	
Allow-DHCP-Renew	Incoming IPv4, protocol UDP From wan To this device, port 68	Accept input	<input checked="" type="checkbox"/>	≡ Edit Delete
Allow-Ping	Incoming IPv4, protocol ICMP From wan To this device	Drop input	<input checked="" type="checkbox"/>	≡ Edit Delete
Allow-IGMP	Incoming IPv4, protocol IGMP From wan To this device	Accept input	<input checked="" type="checkbox"/>	≡ Edit Delete
Allow-DHCPv6	Incoming IPv6, protocol UDP From wan To this device, port 546	Accept input	<input checked="" type="checkbox"/>	≡ Edit Delete

Add

Save & Apply

3. Traffic Rules

a. Configure traffic rules.

Firewall - Traffic Rules - Unnamed rule

General Settings

Name: Unnamed rule

Protocol: TCP UDP

Source zone: Device (output)

Source address: -- add IP --

Source port: any

Output zone:

Destination address: -- add IP --

Destination port: any

Action: accept

Any
 TCP
 UDP
 ICMP
 IGMP
 IPSEC-ESP
 -- custom --

Device (output)
 Any zone (forward)
 ipip (empty)
 lan lan: ۳۳
 wan wwan0: ۳۳

drop
 accept
 reject

Dismiss Save & Apply

- b. Add/Edit traffic rules.
4. The following are default network communication services on the device:
 - a. DNS outbound and inbound (53/UDP, 53/TCP): lookup of domain names to IP addresses.
 - b. NTP outbound (123/UDP): obtain date and time.
 - c. HTTP(S) inbound (80/TCP, 443/TCP): local user interface service.
 - i. Blocked from WAN side by default traffic rules.
 - d. AC-Cloud outbound (997/TCP, 443/TCP): remote device management.
 - e. AC-Cloud inbound (42138/TCP): remote device management.

Airgain))) Status System Network Logout

eSIM Setup Flow

AC Cloud Subscription

Status: Subscribed

The following settings are only accessible within a subscription.

Ping Test After Activation/Device Reboot

Enable

Profile Switching Conditions

Enable

Revert to Initialization State

Revert to do initial profile downloading

viii. eSIM Setup Flow

1. AC-Cloud Subscription will indicate the status of subscription.
2. Enable Ping Test for additional confirmation the eSIM profile is connected to the cellular network.
 - a. Device will always check for an IP address by default which is displayed under Network on the Overview page.
3. Enable Profile Switching Conditions for configuring how long after the current eSIM profile loses connectivity before automatically switching to the next priority.
4. The Revert button activates the bootstrap profile for syncing with AC-Cloud if a connection cannot be established with existing eSIM profiles or Depot Mode.
 - a. The bootstrap profile has limited data so should only be used if necessary.

Ping Test After Activation/Device Reboot

Enable

Test host option(s)
• A maximum of 3 hosts may be permitted.

Number of test packet(s)
• The range from 1 to 5 packets. A response from any packet means success, otherwise it means failure.

5. Enabling Ping Test After Activation/Device Reboot requires that an eSIM profile satisfy the ping test settings to confirm cellular connectivity after booting up.
 - a. Test host options(s)
 - i. Will accept IPv4, IPv6 or a hostname such as google.com.
 - b. Number of test packet(s)
 - i. Define number of ping test requests that must respond within 2 seconds.

Profile Switching Conditions

Enable

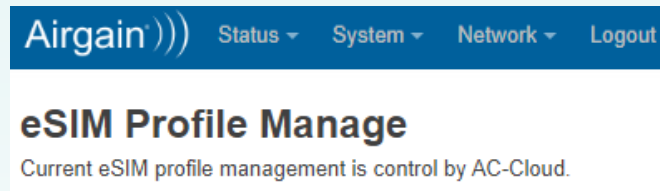
Lose connection for (seconds)
• The range is from 5 to 120 seconds.

Ping test enable

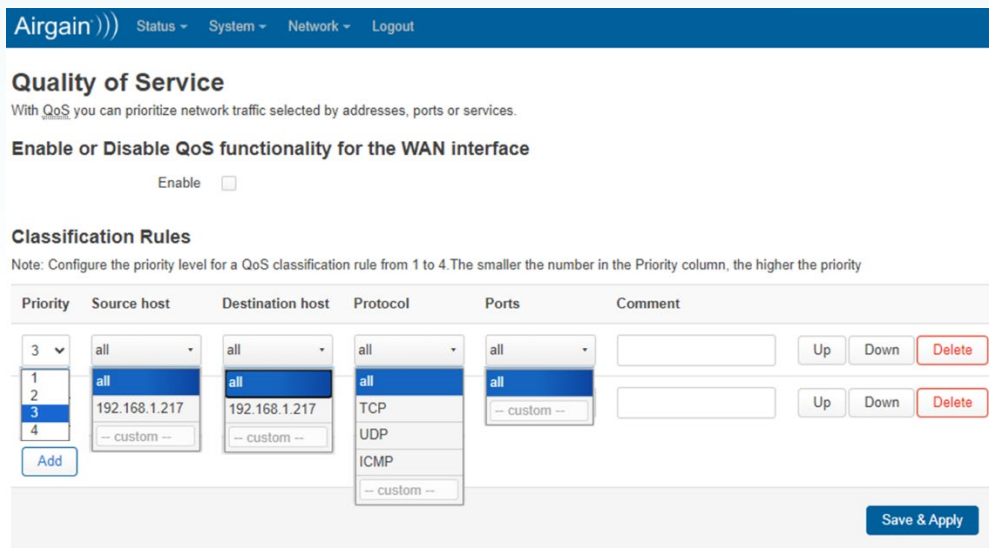
Ping latency exceeds (ms)
• The range is from 500 to 1500 milliseconds.

Ping test host

6. Enabling Profile Switching Conditions will allow for the device to automatically switch to the next priority eSIM profile if cellular connectivity is lost.
 - a. Lose connection for (seconds)
 - i. Device will check for a loss of IP every 5 seconds and trigger a switch if the configured time limit is reached.
 - b. Ping test enable requires that an eSIM profile satisfies the ping test settings to confirm cellular connectivity.
 - i. Ping test host will accept IPv4, IPv6 or a hostname such as google.com.



- ix. eSIM Profile Manage
 1. Not applicable with active AC-Cloud subscription.



- x. QoS
 1. Configure Quality of Service settings.

4. Customer Support

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