

AirgainConnect® Fleet™

5G Vehicle Gateway

User Guide

Airgain, Inc

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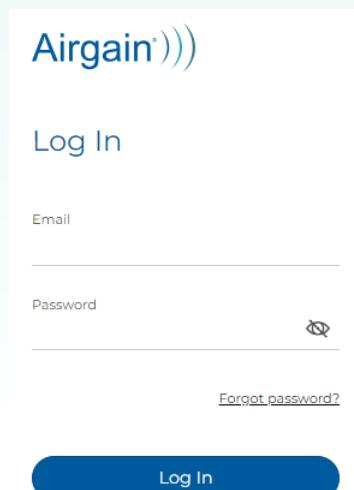
1. Introduction

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



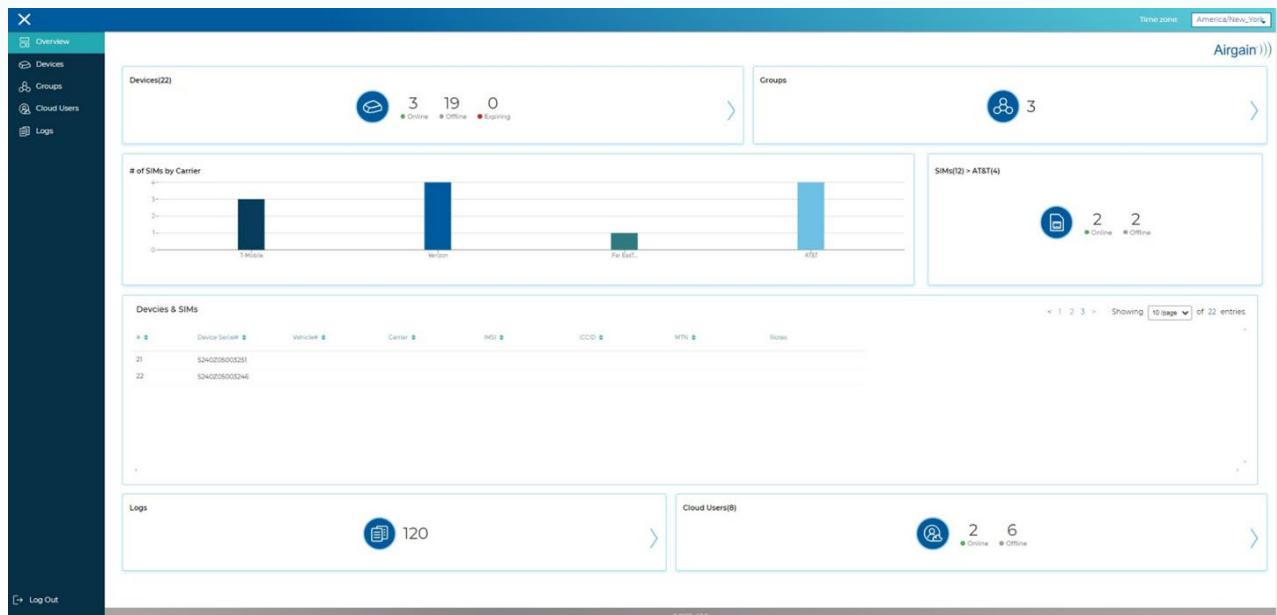
The image shows the AC-Cloud Log In screen. At the top, the Airgain logo is displayed. Below it, the word "Log In" is centered. There are two input fields: "Email" and "Password". The "Email" field is empty. The "Password" field contains a placeholder "Password" and has a small "X" icon to its right. Below the password field is a "Forgot password?" link. At the bottom of the form is a large blue "Log In" button.

- 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	--	--	--	(*)

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

Time zone: Eastern

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Overview

Devices

SIMs

Service Status

Groups

Cloud Users

Logs

Save Cancel

Remote Admin: Reset PWD Connect

Status: Subscribed

Subscription end: 07/21/2025

Device serial #: 031240501D

Vehicle #:

Group: Default Group

Firmware: ..

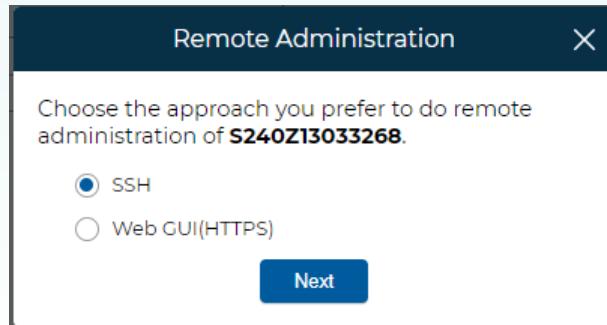
Config: ..

Schedule to Update: ..

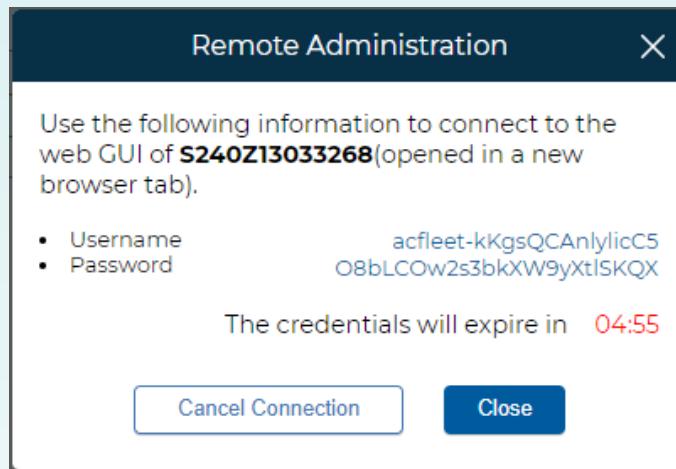
Notes about Device

Log Out

- 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.



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Authorization Required

Please enter your username and password.

Username	acfleet-kKgsQCAnlyicC5
Password

Login **Admin Password Reset**

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

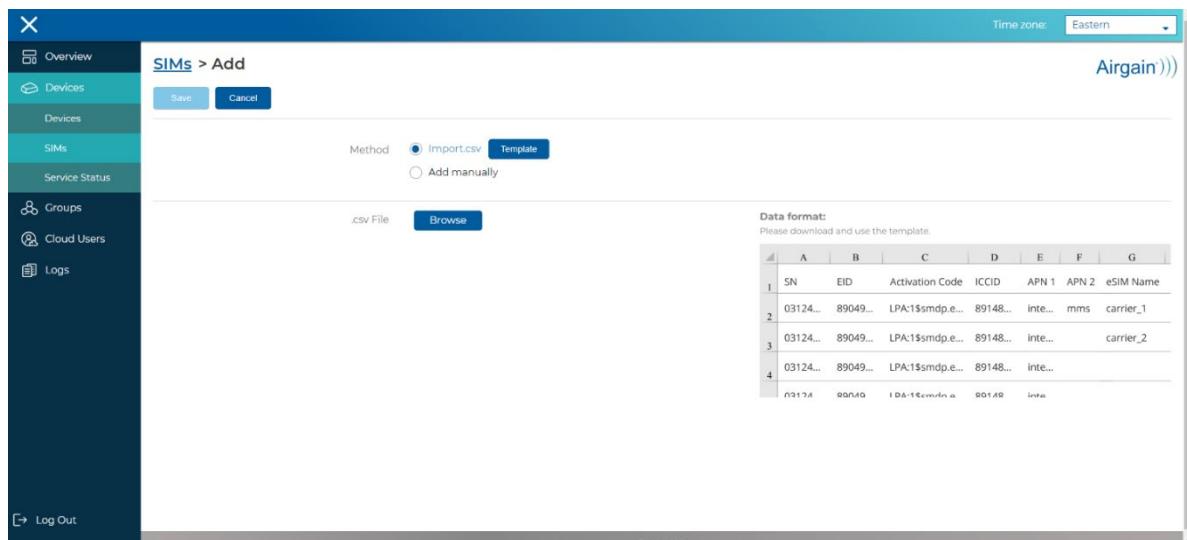
SIMs

Device Serial #	eSIM Status	eSIM Name	Carrier	ICCID	APN 1	APN 2
031240500A	Activated	preloaded_eSIM	Verizon	Hidden	v5GA0INTERNET	broadband
031240500A	Activated	ATT_provided_by_AG	AT&T	Hidden	firstnet-broadband	firstnet-broadband
031240501C	In Use	FirstNet	FirstNet	Hidden	firstnet-broadband	firstnet-broadband
031240501D	In Use	FirstNet	FirstNet	Hidden	v5ga0internet	iot-t-mobile.com
031240501E	Activated	FirstNet	FirstNet	Hidden	firstnet-broadband	firstnet-broadband
031240501E	In Use	preloaded_eSIM	Verizon	Hidden	firstnet-broadband	firstnet-broadband
031240501E	Downloading...	T-Mobile		Hidden	firstnet-broadband	firstnet-broadband
031240501F	In Use	FirstNet	FirstNet	Hidden	firstnet-broadband	firstnet-broadband
031240501G	In Use	FirstNet	FirstNet	Hidden	firstnet-broadband	firstnet-broadband
031240501L	In Use	FirstNet	FirstNet	Hidden	firstnet-broadband	firstnet-broadband

Showing 10 /page of 73 entries.

- 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.



The screenshot shows the 'SIMs > Add' page in the Airgain interface. The left sidebar includes 'Overview', 'Devices', 'SIMs' (selected), 'Service Status', 'Groups', 'Cloud Users', and 'Logs'. The main area has a 'Save' and 'Cancel' button. It shows 'Method' options: 'Import.csv' (selected) and 'Template', with 'Add manually' as an alternative. A 'csv File' input field and a 'Browse' button are present. A 'Data format' section contains a table template:

	A	B	C	D	E	F	G
1	SN	EID	Activation Code	ICCID	APN 1	APN 2	eSIM Name
2	03124...	89049...	LPA:1\$mdp.e...	89148...	inte...	mms	carrier_1
3	03124...	89049...	LPA:1\$mdp.e...	89148...	inte...		carrier_2
4	03124...	89049...	LPA:1\$mdp.e...	89148...	inte...		

At the bottom, it says '© 2024 v3.7'.

- 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.

Device Serial # S240213033259

SIMs

#1: A preloaded eSIM, not deletable

Status: Activated

eSIM name: Explorer-DVT2-VZ

ICCID: **Hidden**

* APN 1: VSGA11INTERNET

APN 2:

#2

Status: Activated

eSIM name: Explorer-DVT2-ATT

Carrier: AT&T

ICCID: **Hidden**

* APN 1: broadband

APN 2:

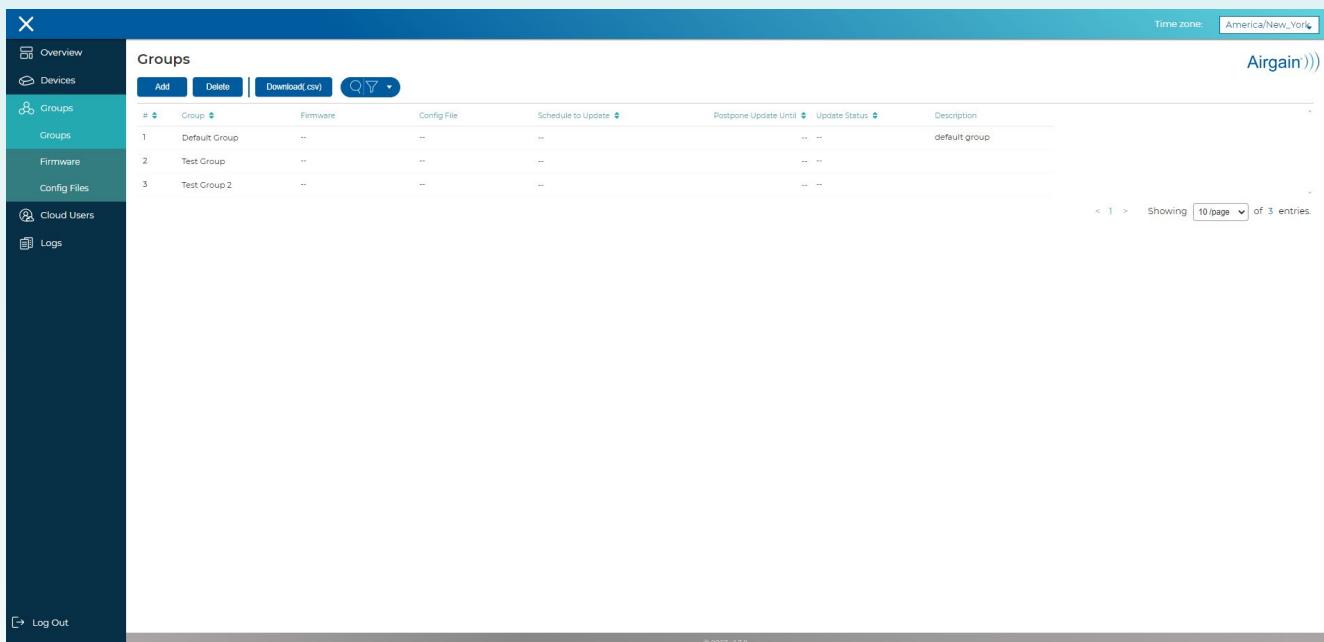
- vi. Click on the **+** button to manually add additional eSIM profiles with required information.
 - 1. Only 4 eSIM profiles are allowed at a time, including the preloaded Verizon profile.
- vii. If a profile fails download/activation it can then be updated and resubmitted.
- viii. Delete eSIM profiles 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	0312405058	-	-	default
33	In Warranty	04/25/2025	S2402050003246	-	-	default
34	In Warranty	04/26/2025	S2402013033261	-	-	default
35	In Warranty	07/02/2025	0312405031	-	-	default
36	In Warranty	04/25/2025	S2402050003263	-	-	default
37	In Warranty	07/02/2025	0312405022	-	-	default
38	In Warranty	07/02/2025	03124050240	-	-	default
39	In Warranty	07/02/2025	0312405058	-	-	default
40	In Warranty	07/02/2025	0312405048	-	-	default

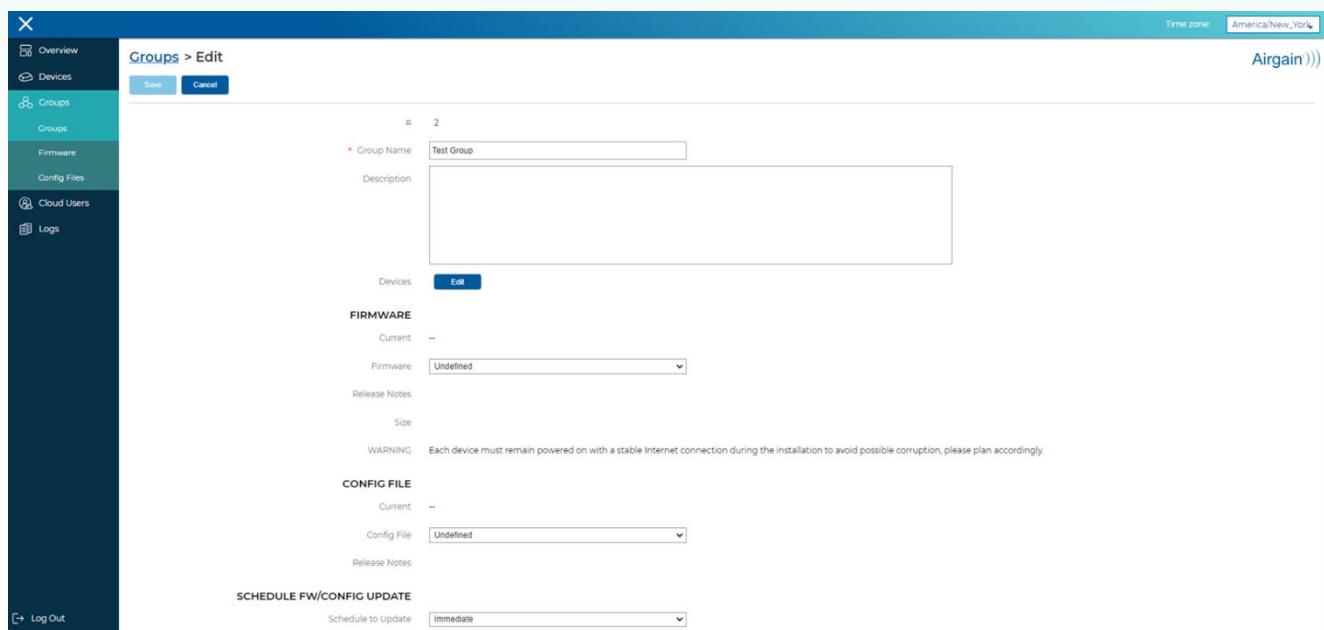
- i. Browse AC-Fleet devices for subscription status and expiration date.

g. Groups



#	Group	Firmware	Config File	Schedule to Update	Postpone Update Until	Update Status	Description
1	Default Group	--	--	--	--	--	default group.
2	Test Group	--	--	--	--	--	
3	Test Group 2	--	--	--	--	--	

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



Groups > Edit

Group Name: Test Group

Description:

Devices: Edit

FIRMWARE

Current: --

Firmware: Undefined

CONFIG FILE

Current: --

Config File: Undefined

SCHEDULE FW/CONFIG UPDATE

Schedule to Update: Immediate

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

Edit Devices of Test Group

Devices in Default Group:

#	Device Serial #	Vehicle #
1	S240Z05003214	
2	S240Z05003249	
3	S240Z05003252	
4	S240Z05003263	
5	S240Z05003276	
6	S240Z05003277	
7	S240Z13033262	
8	S240Z13033263	
9	S240Z13033267	
10	S240Z13033260	
11	S240Z13033270	
12	S240Z13033269	

← →

Cancel Save

v. Move devices between Default Group.

h. Firmware

Firmware

Search release notes

#	Firmware	Release Date	Size	Release Notes
1	v03.01.02.0002	06/04/2024 01:20:27	57.50 MB	b5 FW
2	v03.01.02.0002	06/04/2024 01:55:35	57.50 MB	b5 FW dummy
3	v03.01.02.0002d	06/04/2024 04:45:10	57.50 MB	b5 FW dummy

Time zone: America/New_York

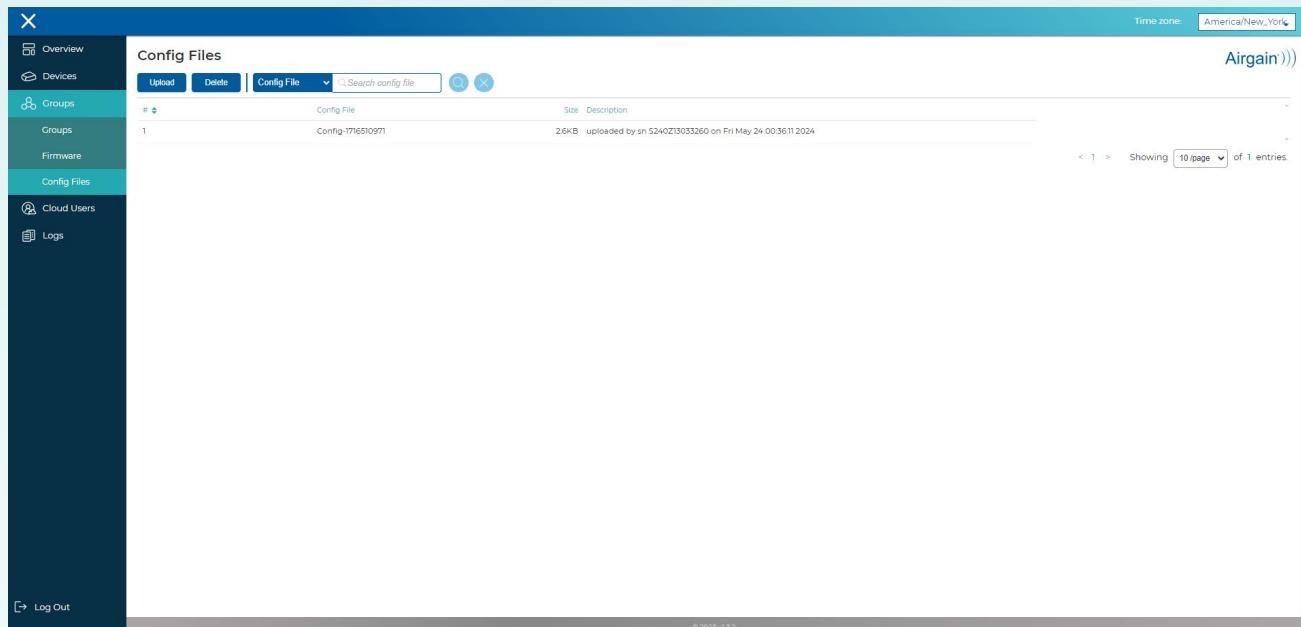
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< 1 > Showing 10/page of 3 entries

Log out

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

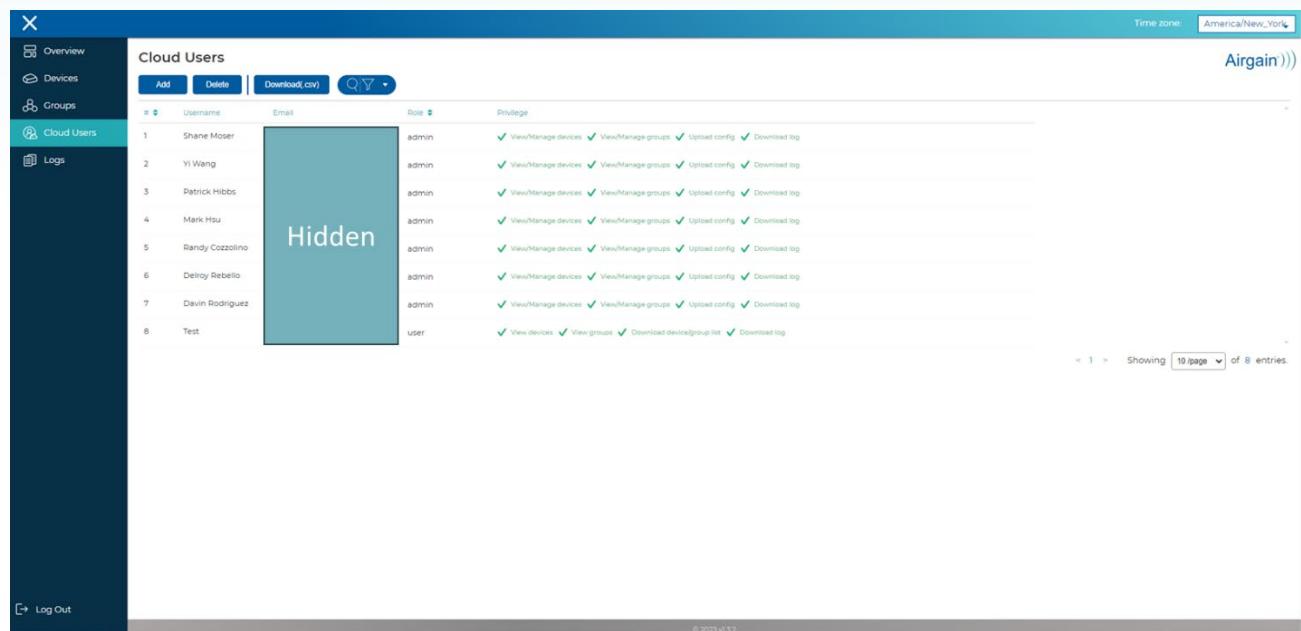
i. Config Files



The screenshot shows the 'Config Files' section of the Airgain interface. On the left, a sidebar includes 'Overview', 'Devices', 'Groups', 'Firmware', 'Config Files' (which is selected and highlighted in blue), 'Cloud Users', and 'Logs'. On the right, the main area is titled 'Config Files' with sub-titles 'Upload', 'Delete', and 'Config File'. A search bar 'Search config file' is present. A table lists a single file: 'Config-1716510971' (2.6kB, uploaded by sn 5240213033260 on Fri May 24 00:36:11 2024). Navigation controls and a page size selector 'Showing 10/page of 1 entries' are at the bottom.

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

j. Cloud Users



The screenshot shows the 'Cloud Users' section of the Airgain interface. The sidebar includes 'Overview', 'Devices', 'Groups', 'Cloud Users' (selected and highlighted in blue), and 'Logs'. The main area is titled 'Cloud Users' with sub-titles 'Add', 'Delete', and 'Download(.csv)'. A search bar 'Search' is present. A table lists eight users: 1. Shane Moser (admin), 2. Yi Wang (admin), 3. Patrick Hibbs (admin), 4. Mark Hsu (admin), 5. Randy Cozzolino (admin), 6. Delroy Rebello (admin), 7. Davin Rodriguez (admin), and 8. Test (user). The 'Test' user is highlighted with a large blue box containing the word 'Hidden'. Navigation controls and a page size selector 'Showing 10/page of 8 entries' are at the bottom.

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

Cloud Users > Edit

Time zone: America/New_York

Username: Shane Moser

Email: Hidden

Role: user

Privileges:

- View and manage devices
 - Download device list(csv)
 - Manage devices: create, edit, delete
 - Do remote administration: GUI, SSH
- View and manage groups
 - Download group list(csv)
 - View groups' device list
 - Set up FW/config file
 - Do advanced settings
 - Create/edit/delete a group
 - Add/remote devices from a group
 - Upload config files
 - Download cloud log(csv)

Role: admin

Privileges:

- View and manage devices
 - Download device list(csv)
 - Manage devices: create, edit, delete
 - Do remote administration: GUI, SSH
- View and manage groups
 - Download group list(csv)
 - View groups' device list
 - Set up FW/config file
 - Do advanced settings
 - Create/edit/delete a group
 - Add/remote devices from a group
 - Upload config files
 - Download cloud log(csv)

NOTIFICATION:

Send email when:

- service will expire
- new firmware available
- FOTA set for a group
- devices added to/removed from the cloud
- config file uploaded

Device status:

- low vehicle battery (occurs/clears)
- thermal protection mode (on/off)
- device admin password changed
- device reset to default

- 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

Logs

Download.csv

Time zone: America/New_York

Cloud User: Hidden

#	Date/Time	Cloud User	IP Address	Action
11	06/06/2024 14:57:10	Hidden		
12	06/06/2024 18:29:42	Hidden		
13	06/06/2024 18:31:51	Hidden		
14	06/10/2024 18:58:44	Hidden		
15	06/10/2024 19:17:29	Hidden		
16	06/10/2024 19:17:56	Hidden		
17	06/10/2024 19:22:03	Hidden		
18	06/10/2024 19:41:03	Hidden		
19	06/10/2024 19:43:49	Hidden		
20	06/10/2024 19:52:35	Hidden		

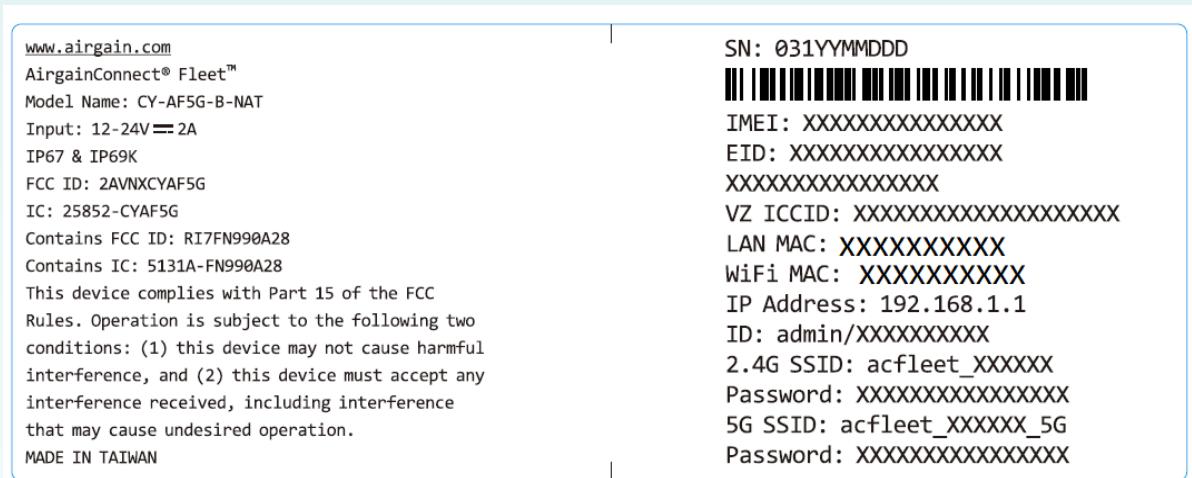
Showing 10 /page of 137 entries.

- i. Browse available AC-Cloud event logs.

3. Local GUI

a. Logging In

Product Label



Device Package Label



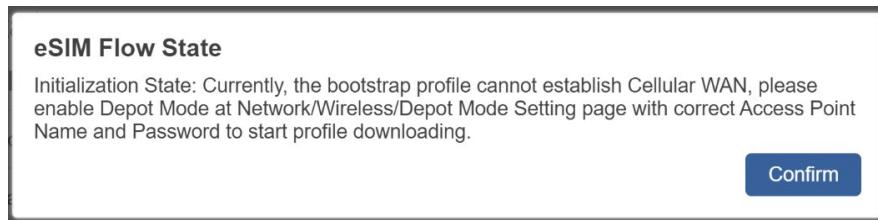
- i. Refer to the product label attached to the Ethernet cable or device package label for relevant information.
 1. IP address for accessing local GUI is **192.168.1.1**.
 2. Username is admin.
 3. Default admin password is listed after admin/ (fmbct7tkf7 in example device package label above).
 4. 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

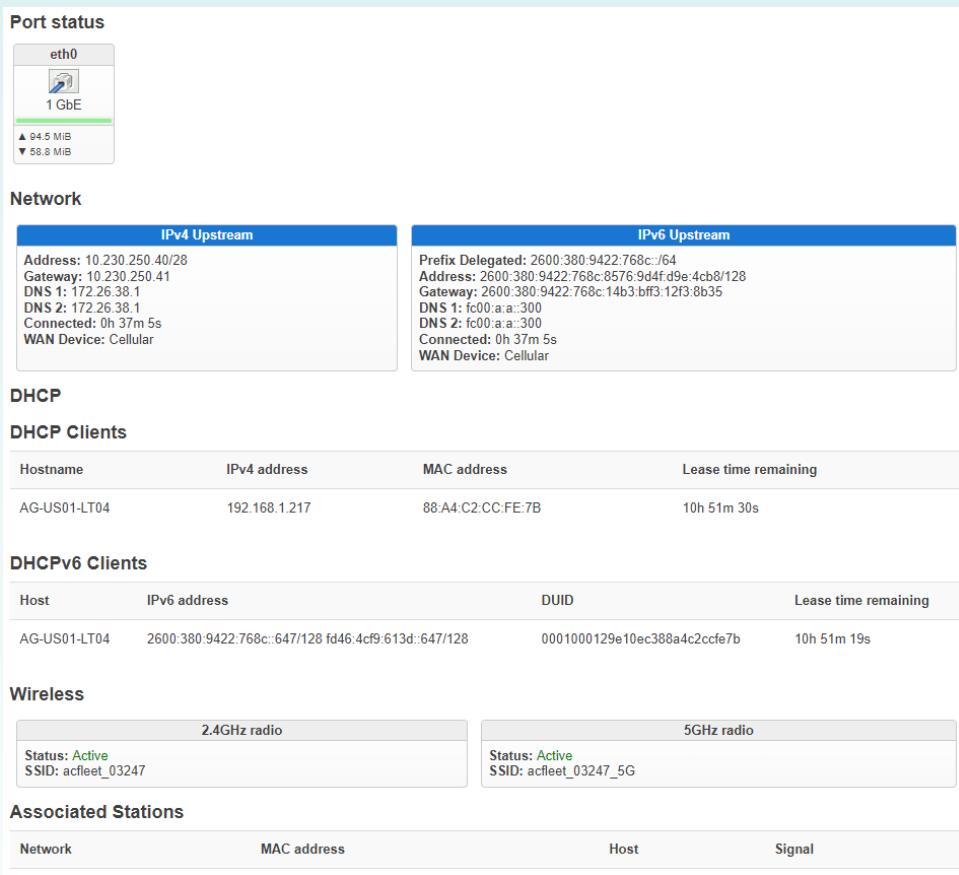
Airgain)))		Status	System	Network	Logout
Cellular Status					
<hr/>					
Profile	eSIM Profile 2				
Status	Active				
IMSI	Hidden				
ICCID	Hidden				
EID	Hidden				
IMEI	Hidden				
Network Mode	AT&T				
Country/Region	United States of America				
Network	5G NSA				
Band	LTE Band 14 (700/800 MHz) RSSI: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



iv. Port status

- Relevant LAN information, hover mouse over bottom of box for additional data.

v. Network

- Internet Protocol (IP) address info for IPv4 and IPv6.
- WAN Device will indicate if connected over Cellular or WLAN if in Depot Mode.

vi. Dynamic Host Configuration Protocol (DHCP)

- Relevant information for device clients.

vii. Wireless

- Active status indicates AC-Fleet is broadcasting as an Access Point.

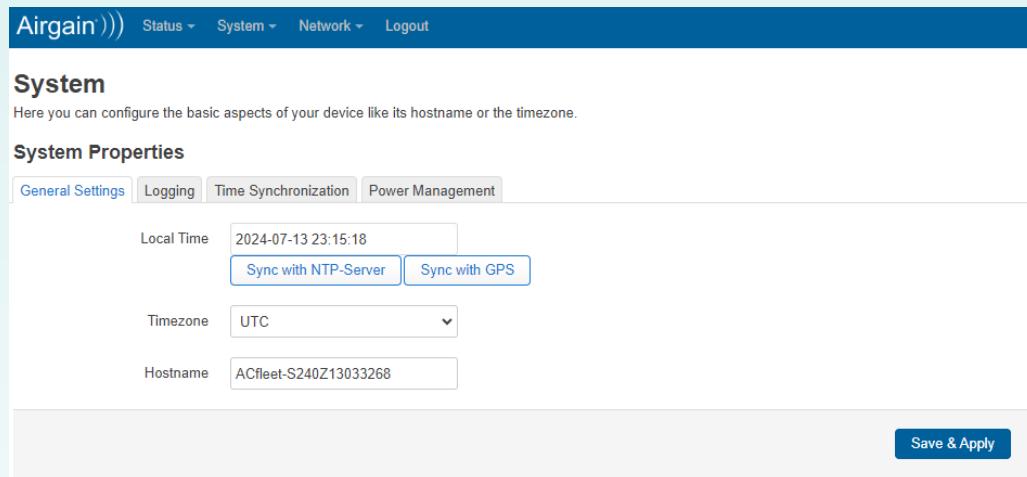


viii. Associated Stations

- Relevant information for active clients.

e. System

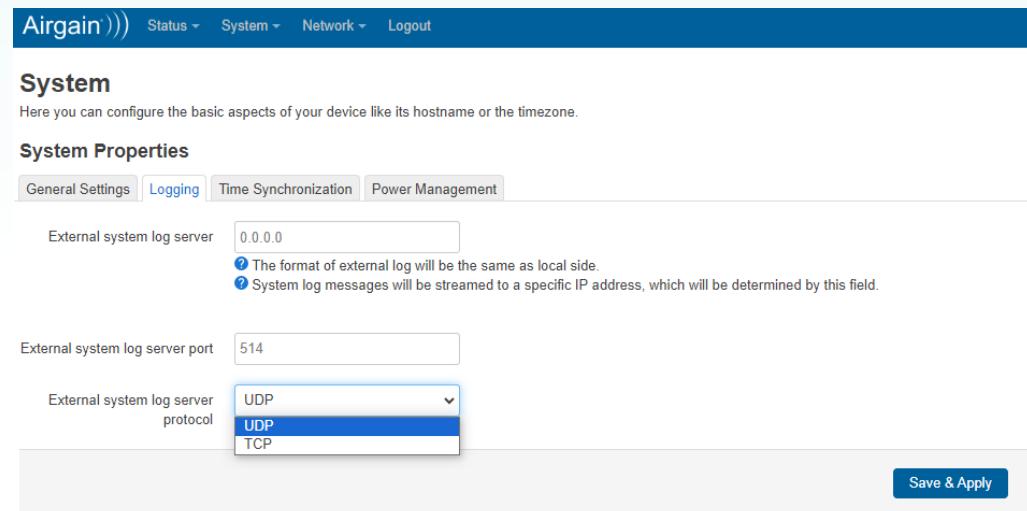
i. System Properties



The screenshot shows the 'System Properties' page under the 'General Settings' tab. It includes fields for Local Time (2024-07-13 23:15:18), Timezone (UTC), and Hostname (ACfleet-S240Z13033268). Buttons for 'Sync with NTP-Server' and 'Sync with GPS' are present. A 'Save & Apply' button is at the bottom right.

1. General Settings

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



The screenshot shows the 'System Properties' page under the 'Logging' tab. It includes fields for External system log server (0.0.0.0), External system log server port (514), and External system log server protocol (UDP). A note explains that the format of external log will be the same as local side, and system log messages will be streamed to a specific IP address. A 'Save & Apply' button is at the bottom right.

2. Logging

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

Airgain))) Status ▾ System ▾ Network ▾ Logout

System

Here you can configure the basic aspects of your device like its hostname or the timezone.

System Properties

General Settings Logging **Time Synchronization** Power Management

Time Sync NTP NTP GPS NTP/GPS 1.pool.ntp.org

Save & Apply

3. Time Synchronization

- Configure automatic UTC time synchronization to NTP or GPS.

Airgain))) Status ▾ System ▾ Network ▾ Logout

System

Here you can configure the basic aspects of your device like its hostname or the timezone.

System Properties

General Settings Logging **Time Synchronization** Power Management

Minimum Battery Voltage 9 ⓘ Range: 9V~26V
 ⓘ If the battery voltage suddenly falls below the threshold, any data log (include GNSS data) that has not been stored to flash will not be saved before entering standby.

Ignition Off Timer 30 ⓘ Range: 30(s)~14400(s)
 ⓘ The device will continue to serve for several seconds after the vehicle is turned off. The duration of service is determined by the setting value here.

Save & Apply

4. Power Management

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

ii. Administration

Airgain))) Status ▾ System ▾ Network ▾ Logout

Router Password User Account Advanced Mode

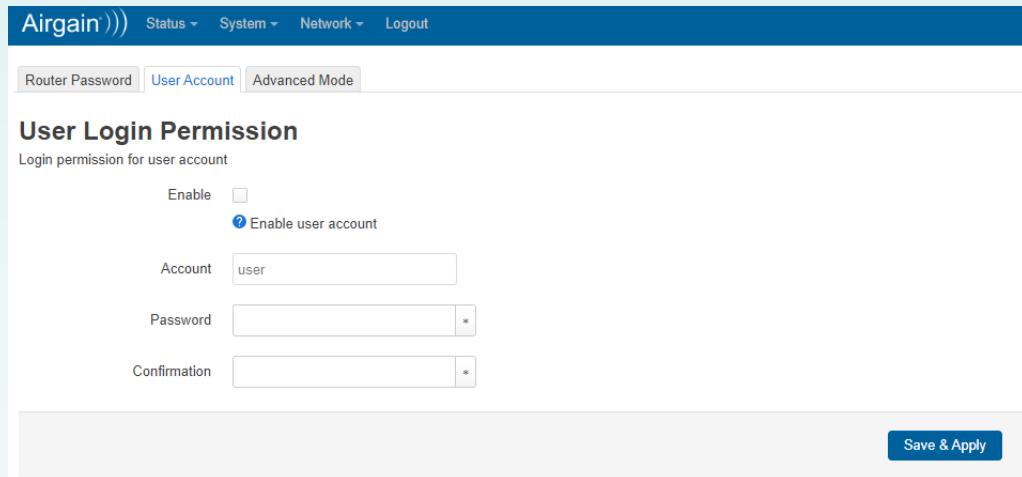
Router Password

Changes the administrator password for accessing the device

Password * Confirmation *

Save

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



Router Password User Account Advanced Mode

User Login Permission
Login permission for user account

Enable Enable user account

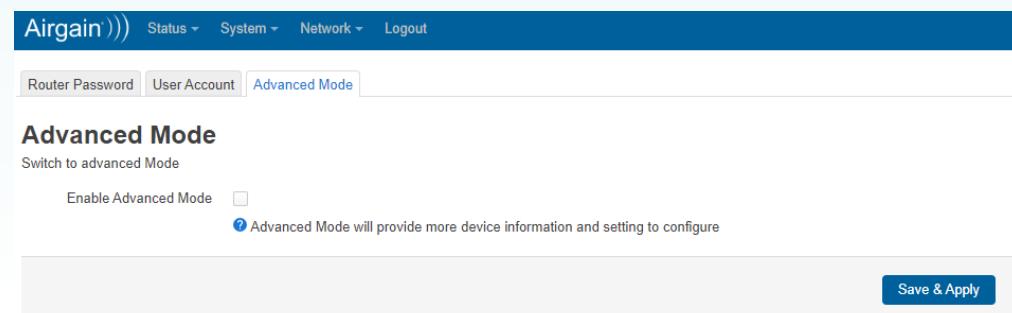
Account: user

Password: *

Confirmation: *

Save & Apply

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



Router Password User Account Advanced Mode

Advanced Mode
Switch to advanced Mode

Enable Advanced Mode Advanced Mode will provide more device information and setting to configure

Save & Apply

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

Airgain))) Status System Network Logout

Firmware / Configuration

Backup

Click "Download" to download current configuration files.

Download backup **Download**

Download backup to cloud **Backup to cloud**

Restore

To restore configuration files, you can upload a previously generated backup config here. To reset the firmware to its initial state, click "Reset to default".

Reset to defaults **Reset to default**

⚠ **WARNING: This option will delete and reset all settings in AC-Fleet to default values (Except for downloaded eSIM profiles).

Restore backup **Upload config**

Flash new firmware image

Upload image here to replace the running firmware.

Latest version : **v03.01.02.0002d**

💡 if the cloud subscription is not active, the latest will not be displayed.

Open Change Note

Current version : **v03.01.02.0002_20240626**

Upgrade to latest version **Upgrade Now**

Upgrade Firmware from file **Select image**

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.

Airgain))) Status System Network Logout

Reboot

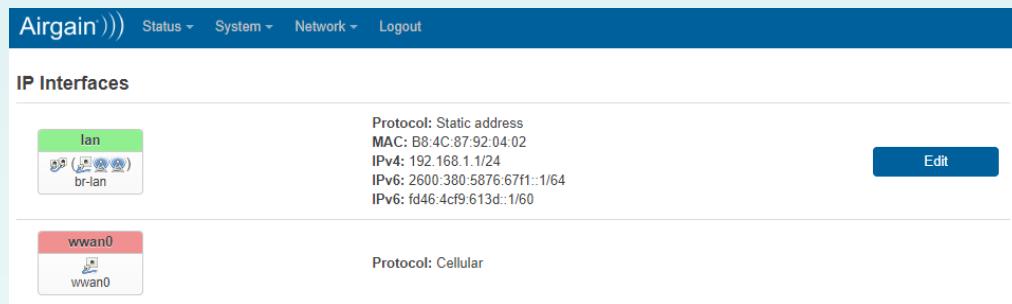
Reboots the operating system of your device

Perform reboot

iv. Reboot

1. Reboot the device.

f. Network



The screenshot shows the 'IP Interfaces' section of the Airgain web interface. It lists two interfaces: 'lan' and 'wwan0'. The 'lan' interface is in green and has a 'br-lan' icon. Its details are as follows:

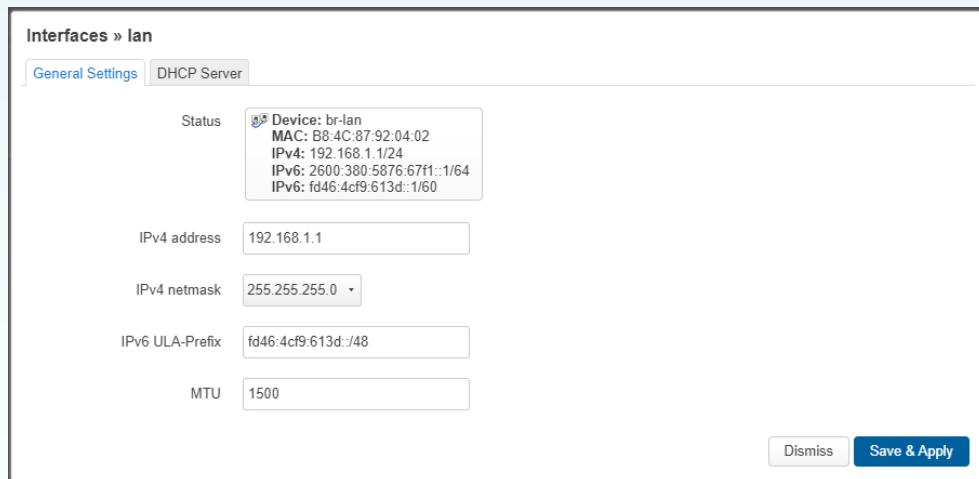
Protocol:	Static address
MAC:	B8:4C:87:92:04:02
IPv4:	192.168.1.1/24
IPv6:	2600:380:5876:67f1::1/64
IPv6:	fd46:4cf9:613d::1/60

There is a blue 'Edit' button to the right of the 'lan' interface. The 'wwan0' interface is in red and has a 'wwan0' icon. Its details are as follows:

Protocol:	Cellular
-----------	----------

i. IP Interfaces

- Relevant IP interface information and option for editing settings.



The screenshot shows the 'lan' interface configuration page. It has tabs for 'General Settings' and 'DHCP Server', with 'General Settings' selected. The 'Status' section shows the following details:

Device:	br-lan
MAC:	B8:4C:87:92:04:02
IPv4:	192.168.1.1/24
IPv6:	2600:380:5876:67f1::1/64
IPv6:	fd46:4cf9:613d::1/60

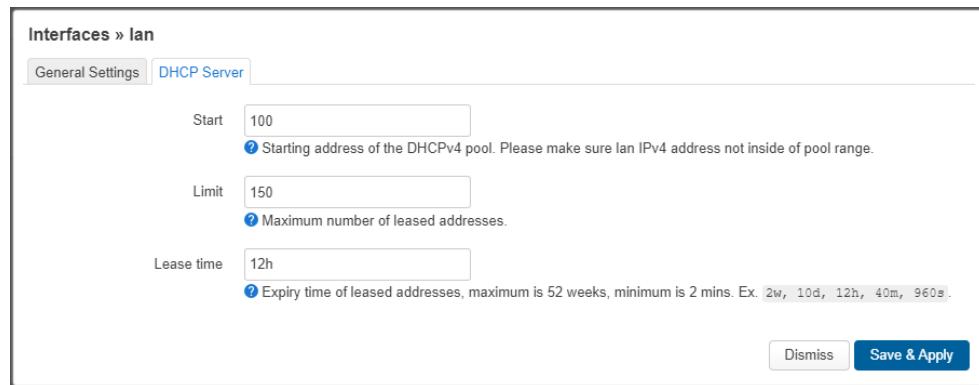
Below the status are input fields for:

- IPv4 address: 192.168.1.1
- IPv4 netmask: 255.255.255.0
- IPv6 ULA-Prefix: fd46:4cf9:613d::/48
- MTU: 1500

At the bottom are 'Dismiss' and 'Save & Apply' buttons.

2. General Settings

- Edit general settings.



The screenshot shows the 'lan' interface configuration page with the 'DHCP Server' tab selected. It has input fields for:

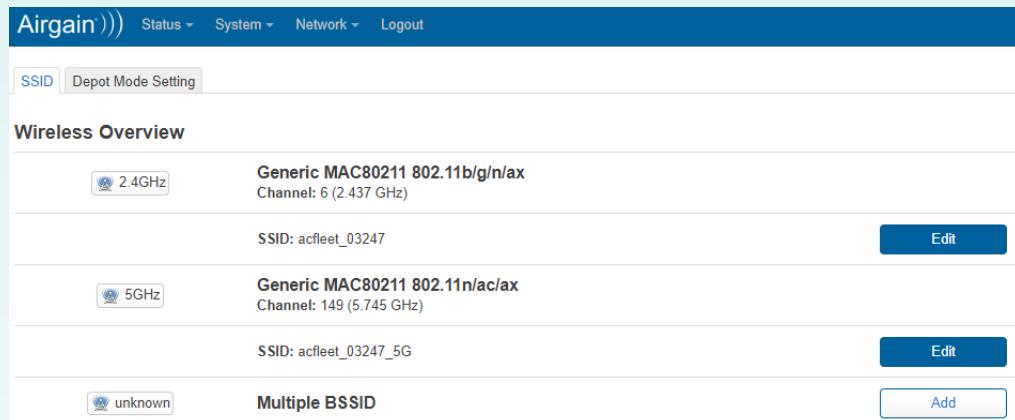
- Start: 100 (with a note: ? Starting address of the DHCPv4 pool. Please make sure lan IPv4 address not inside of pool range.)
- Limit: 150 (with a note: ? Maximum number of leased addresses.)
- Lease time: 12h (with a note: ? Expiry time of leased addresses, maximum is 52 weeks, minimum is 2 mins. Ex. 2w, 10d, 12h, 40m, 960s.)

At the bottom are 'Dismiss' and 'Save & Apply' buttons.

3. DHCP Server

- Edit DHCP server settings.

ii. Wireless

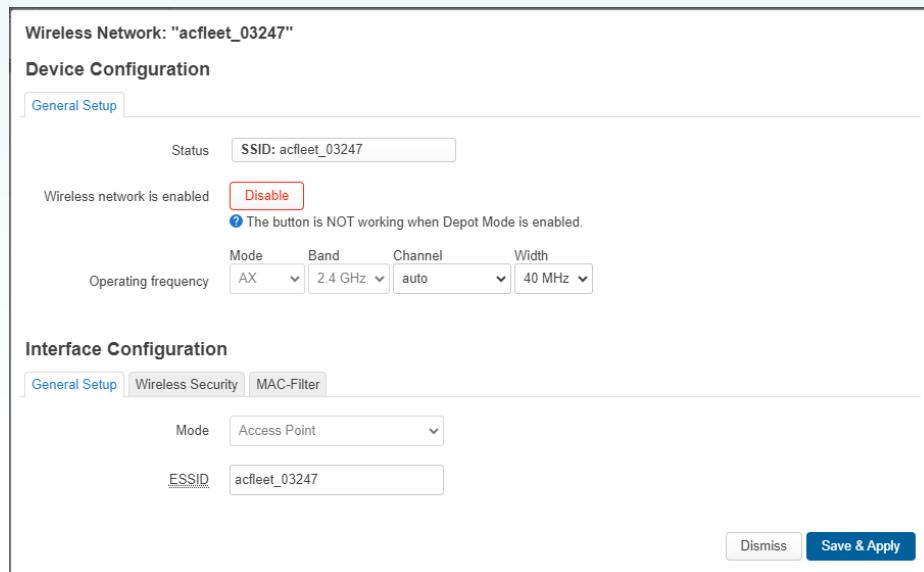


The screenshot shows the 'Wireless Overview' section of the Airgain interface. It lists three wireless interfaces:

- 2.4GHz:** Generic MAC80211 802.11b/g/n/ax, Channel: 6 (2.437 GHz). Status: Enabled. Edit button.
- 5GHz:** Generic MAC80211 802.11n/ac/ax, Channel: 149 (5.745 GHz). Status: Enabled. Edit button.
- unknown:** Multiple BSSID. Status: Enabled. Add button.

1. SSID

- Configure existing SSID settings or additional SSID options.



The screenshot shows the 'Device Configuration' page for the SSID 'acfleet_03247'. It has two main sections:

- Device Configuration:** Contains 'General Setup' tab. Status: Enabled. SSID: acfleet_03247. Wireless network is enabled. Mode: AX, Band: 2.4 GHz, Channel: auto, Width: 40 MHz. A note says 'The button is NOT working when Depot Mode is enabled.'
- Interface Configuration:** Contains 'General Setup' tab. Mode: Access Point. ESSID: acfleet_03247. Buttons: Dismiss, Save & Apply.

- General Setup

- 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.

Mode	Band	Channel	Width	
Operating frequency	AX	2.4 GHz	auto	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.

Mode	Band	Channel	Width	
Operating frequency	AX	2.4 GHz	auto	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

Default Scan interval: 2:00
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.

Save & Apply

2. Depot Mode Setting

- 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.
 - AC-Fleet will temporarily lose WAN connectivity as it switches between cellular and Depot Mode.
 - SSID from AC-Fleet will be disabled while in Depot Mode, except during initial syncing process.
 - Wi-Fi clients will need to switch to the Depot Mode AP.
 - Note that AC-Fleet cannot connect to a hidden AP.
- Configure the amount of time after losing connection to Depot Mode AP before switching to cellular network.
- Select how frequent AC-Fleet will scan for the Depot Mode AP.
 - Default interval is every 2 minutes.
 - Rapid interval is every 1 minute.
 - 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** [lan:](#) [wwan0:](#)

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

Target: **0.0.0.0/0**

Specifies the network address

Gateway: **192.168.0.1**

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** [lan:](#) [wwan0:](#)

Specifies the incoming logical interface name

Source: **0.0.0.0/0**

Specifies the source subnet to match (CIDR notation)

Outgoing interface: **unspecified** [dropdown icon](#)

Specifies the outgoing logical interface name

Destination: **0.0.0.0/0**

Specifies the destination subnet to match (CIDR notation)

[Dismiss](#) [Save & Apply](#)

3. Add a policy route.

Airgain))) Status System Network Logout

GPS Forwarding

Remote Server

Enable:

Host Name/IP: 172.0.0.1:80

Protocol: UDP TCP UDP

Report interval (s): 5

GPS Report Format: NMEA NMEA custom Track Star NMEA

Sentence Type

Configuration of the GNSS Sentence Type

NMEA: GGA+VTG GGA+VTG GGA+VTG+RMC GGA+VTG+RMC+GSA+GSV

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.

Airgain))) Status System Network Logout

Diagnostics

Execution of various network commands to check the connection and name resolution to other systems.

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

- Automatically collects performance and location data at desired intervals.
 - 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.

- 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	<input type="button" value="Capture"/> <input type="button" value="Download"/>

3. Modem (visible in Advanced Mode)

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

Airgain))) Status - System - Network - Logout

Cellular Settings

IP Passthrough

Reply to ICMP Ping

DNS Servers

IPv4 Primary DNS Server

IPv4 Secondary DNS Server

MTU(Maximum Transmission Unit)

eSIM Profile 1 eSIM Profile 2

Priority

ICCID

Carrier

Name

Authentication

Cellular Operation

APN Operator Setting

Data Roaming

APN

SIM PIN

Confirm PIN

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)

General Settings

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

Drop invalid packets

Input	Output	Forward
reject	accept	reject

Zones

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

Port Forwards

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	<input checked="" type="checkbox"/> TCP <input checked="" type="checkbox"/> UDP <input type="checkbox"/> ICMP <input type="checkbox"/> -- custom --
External port	<input type="text"/> <small>Match incoming traffic directed at the given destination port or port range on this host</small>		
Internal IP address	any	<small>Redirect matched incoming traffic to the specified internal host</small>	
Internal port	any	<small>Redirect matched incoming traffic to the given port on the internal host</small>	

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 <u>IPv4</u> , protocol <u>UDP</u> From <u>wan</u> To <u>this device</u> , port <u>68</u>	<u>Accept</u> input	<input checked="" type="checkbox"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>
Allow-Ping	Incoming <u>IPv4</u> , protocol <u>ICMP</u> From <u>wan</u> To <u>this device</u>	<u>Drop</u> input	<input checked="" type="checkbox"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>
Allow-IGMP	Incoming <u>IPv4</u> , protocol <u>IGMP</u> From <u>wan</u> To <u>this device</u>	<u>Accept</u> input	<input checked="" type="checkbox"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>
Allow-DHCPv6	Incoming <u>IPv6</u> , protocol <u>UDP</u> From <u>wan</u> To <u>this device</u> , port <u>546</u>	<u>Accept</u> input	<input checked="" type="checkbox"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>

3. Traffic Rules

a. Configure traffic rules.

Firewall - Traffic Rules - Unnamed rule

General Settings

Name	Unnamed rule	Protocol	TCP <input checked="" type="checkbox"/> UDP <input type="checkbox"/>	Any <input type="checkbox"/> TCP <input checked="" type="checkbox"/> UDP <input type="checkbox"/> ICMP <input type="checkbox"/> IGMP <input type="checkbox"/> IPSEC-ESP <input type="checkbox"/> -- custom --
Source zone	Device (output) <input type="button" value="..."/>	Source address	-- add IP -- <input type="button" value="..."/>	Device (output) <input type="button" value="..."/>
Source port	any <input type="button" value="..."/>	Output zone	<input type="button" value="..."/>	Any zone (forward) <input type="button" value="..."/>
Destination address	-- add IP -- <input type="button" value="..."/>	Destination port	any <input type="button" value="..."/>	ipp (empty) <input type="button" value="..."/>
Action		accept <input type="button" value="..."/>	lan lan: <input type="button" value="..."/>	wan wwan0: <input type="button" value="..."/>
		drop <input type="button" value="..."/>	accept <input checked="" type="button" value="..."/>	reject <input type="button" value="..."/>

Dismiss

b. Add/Edit traffic rules.

4. The following are default network communication services on the device:

- DNS outbound and inbound (53/UDP, 53/TCP): lookup of domain names to IP addresses.
- NTP outbound (123/UDP): obtain date and time.
- HTTP(S) inbound (80/TCP, 443/TCP): local user interface service.
 - Blocked from WAN side by default traffic rules.
- AC-Cloud outbound (997/TCP, 443/TCP): remote device management.
- AC-Cloud inbound (42138/TCP): remote device management.

Airgain))) Status System Network Logout

eSIM Setup Flow

AC Cloud Subscription

Status	Subscribed <input type="button" value="..."/>
--------	---

ⓘ The following settings are only accessible within a subscription.

Ping Test After Activation/Device Reboot

Enable	<input type="checkbox"/>
--------	--------------------------

Profile Switching Conditions

Enable	<input type="checkbox"/>
--------	--------------------------

Revert to Initialization State

Revert to do initial profile downloading <input type="button" value="..."/>	Revert <input type="button" value="..."/>
---	---

Save & Apply

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