

# AL-800 RFID READER

## Getting Started Guide for AWS IoT Core



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# 1 Document Information

## 1.1 Revision History

Version	Modifier	Date	Modify content
1.0	BangYao	2022/11/07	First Draft

## 2 Overview

A fixed RFID UHF Reader with built-in operation data collection functions and integrated with the cloud. It is a RAIN RFID Reader with built-in Compact Edition Middleware that can customize information collection (TID, EPC), designated cloud service location, etc., does not need to integrate through PC or workstation. Moreover, it could be applied into various industries such as parking lots, the gate or forklifts in the warehouse to do further management or inventory to increase work efficiency.

### RFID Solutions

Software	AL-800 has two methods available to develop your own application/software: <ul style="list-style-type: none"><li>● AL-800 Software Development Kit (C#)</li><li>● AL-800 Utility</li></ul>
Antenna	We provide various antenna patterns, such as near field, far field, and induction field, so as to meet the changeable field environment.
RFID inlay	<ul style="list-style-type: none"><li>● General Inlay</li><li>● Metal Inlay</li><li>● Customized Inlay</li></ul> <p>This RFID inlay has a wide frequency range from 860 to 960 MHz; which means you can make your own choices to use NXP, Impinj, or Alien RFID chip, as all of them are compatible with this RFID inlay</p>

## 3 Hardware Description

### 3.1 DataSheet

<b>Interface</b>	
Ethernet	Ethernet 10/100 Base-T auto-MDIX Ethernet port
Wi-Fi	USB 2.0 type-B HID port, 2.4GHz
WWAN	LTE(Optional)
USB 2.0 Host	1
USB HID	1
<b>RFID</b>	
Air Interface Protocol	EPC global UHF Class 1 Gen2 / ISO 18000-63
Frequency Range	860~960 MHz
Frequency Resolution	100 KHz
Power Resolution	0.25dB
RX Sensitivity	-74 dBm
Antenna	4
<b>External Storage</b>	
Micro-SD	1
<b>Power</b>	
DC In	+24V / 1A
<b>Operating Environment</b>	
Operating Temperature	-20°C ~55°C
Storage Temperature	-20°C ~85°C
Operating Humidity	5% ~ 95%
<b>Mechanical</b>	
Size	183mm x 222mm x 32mm
Weight	630g
<b>Software Development / Tool</b>	
URC Protocol	1.1
Tool	URC Client Utility
ATB Session	3
SDK	C# .Net
<b>Certification</b>	
Certification	NCC, SRRC

For more details, please refer to the link below:

<https://github.com/ARIZONSW/Getting-Started-Guide/blob/main/AL-800/AL-800%20Spec.pdf>

### 3.2 Standard Kit Contents

The product package should contain the following items:

- **1\*AL-800 RFID UHF Reader**
- **1\* User Manual**
- **1\*Power Supply**
- **1\*Wi-Fi Antenna**

### 3.3 User Provided items

- **RFID Antenna** For more details, please refer to the link below:

<https://www.arizontw.com/category-rfid-antenna.html>

- **Ethernet Crossover Cable**

### 3.4 Additional Hardware References

*For more information:* <https://www.arizontw.com/category-new-products.html>

## 4 Set up your Development Environment

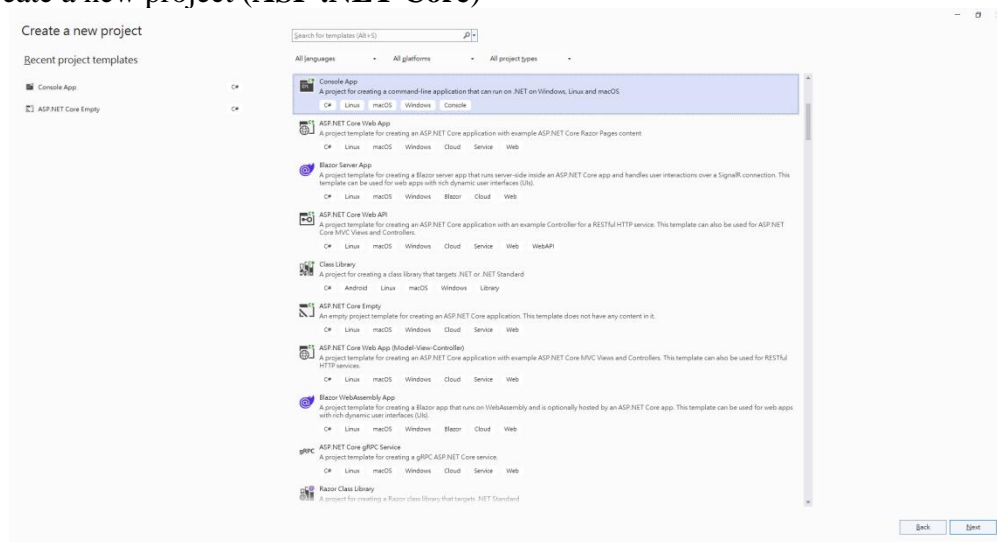
### 4.1 URC C# SDK

SDK for ARIZON RFID readers with URC protocol

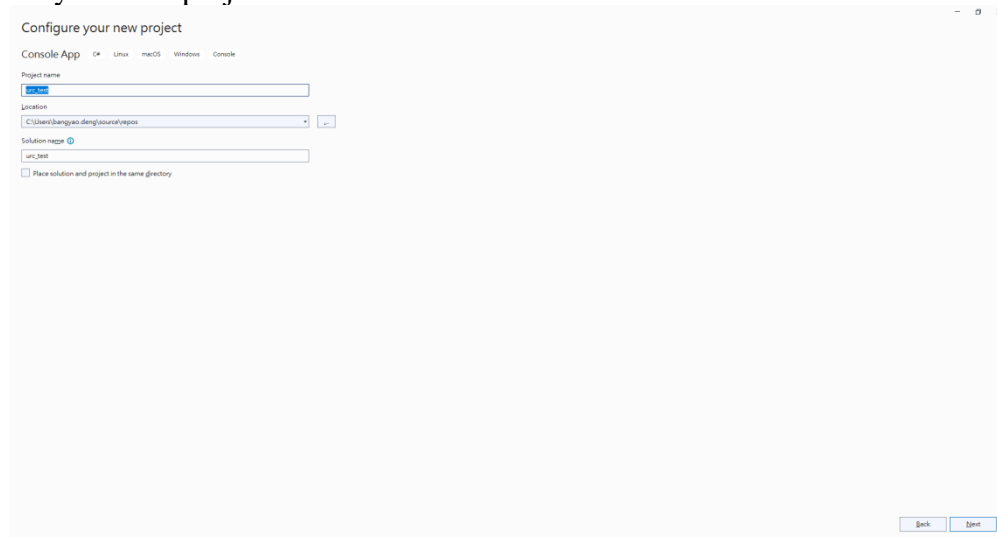
Support	AL-800 RFID Reader
IDE	Visual Studio Code 2022
Environment	.Net Framework 4.8 or .Net Core 7
Programming language	C#

[Contact Us](#) to get URC\_SDK. First, you need to add URC\_SDK reference to the project (Example use **Visual Studio 2022**).

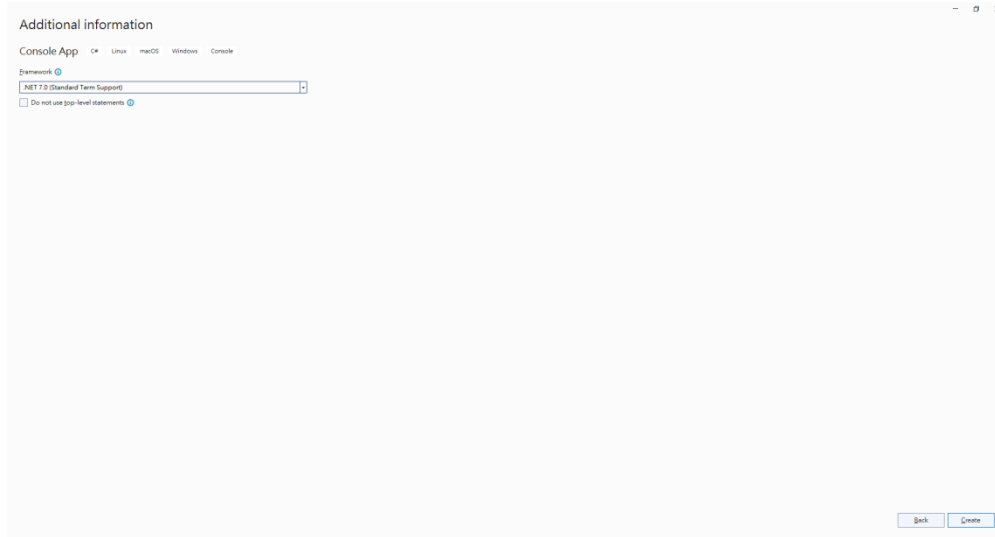
*Step1.* Create a new project (**ASP .NET Core**)



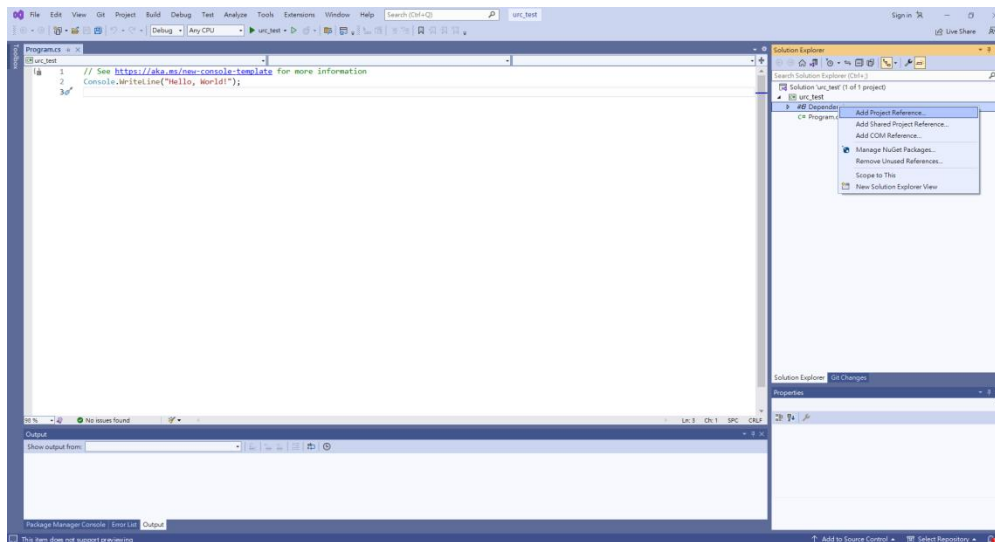
*Step2.* Name your new project



### Step3. Select Framework .NET 7.0

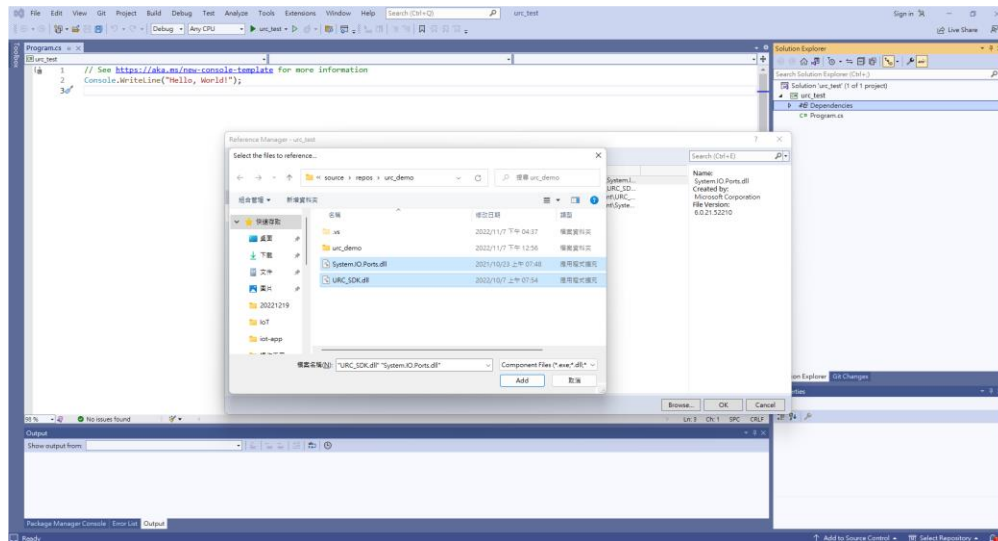


Step4. In **Solution Explorer**, right-click **Dependencies**, and then choose **Add Project Reference** from the context menu.





**Step5.** Click **Browse**. Choose 「**URC\_SDK.dll**」 「**System.IO.Ports.dll**」 , click **Add -> Confirm**



**Step6.** Use the Ethernet crossover cable (This crossed cable is not included in the standard kit, so you should provide it) to connect AL-800 to your computer. Run example code.

```
using URC_SDK.Commnication.Serial;
using URC_SDK.RFIDReader;

void _device_OnConnectionStateChangedEvent(ConnectionStates state)
{
    if (state == ConnectionStates.Connected)
    {
        Console.WriteLine("Connection Status: Connected");
    }
}

URCDevice _device = new URCDevice("Reader1");
_device.Mode = SerialModes.TCP;
_device.OnConnectionStateChangedEvent += _device_OnConnectionStateChangedEvent;
_device.SerialSetting.TCPSetting.Ip = "192.168.50.1";
_device.SerialSetting.TCPSetting.Port = 1001;
_device.Connect();

var temperatureInfo = _device.GetTemperature();
if (temperatureInfo != null)
{
    double systemTemperature = temperatureInfo.SystemTemperature;
    double RFTemperature = temperatureInfo.RFTemperature;
    double PATemperature = temperatureInfo.PowerAmplifierTemperature;
}

_device.Disconnect();
```

## 4.2 URC SDK Function

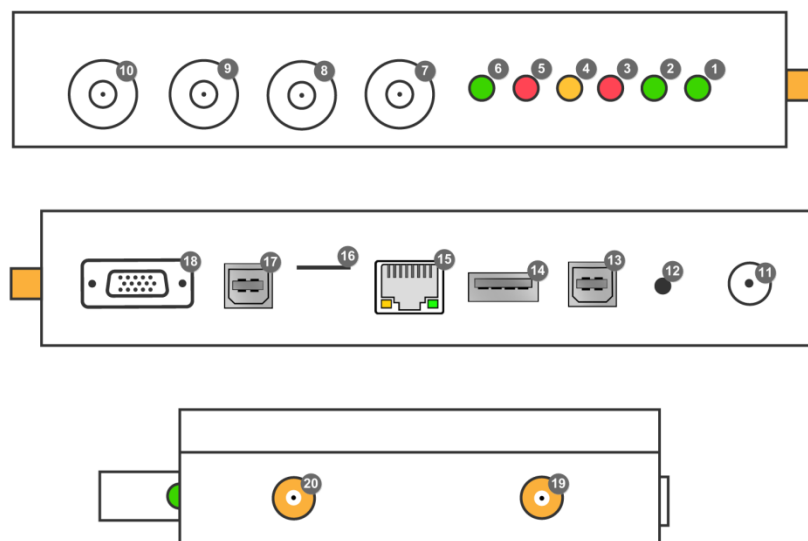
Function	Description
Connect	Connect to reader.
Disconnect	Disconnect to reader.
GetTemperature	Get device temperature. (System, RF, Power Amplifier)
SetATB	Set activity tag broadcast configuration.
GetATB	Get activity tag broadcast configuration.
SetInventoryOperation	Set inventory operation
GetInventoryOperation	Get current inventory operation
SetInventoryConfiguration	Set inventory configuration.
GetInventoryConfiguration	Get inventory configuration
SetAntenna	Set reader antenna power.
GetAntenna	Get reader antenna power.
GetInventoryTag	Get tag object from inventory queue.
SetSelect	Set target tag. (filter by data mask, EPC bank)
GetSelect	Get current select setting.
WriteTag	Write data to target bank.
LockTag	Lock the target tag.
PermalLockTag	Lock the target tag.
KillTag	Kill the target tag.
SetPassword	Set an access password on the target tag. (limit write operation)
SetEndOperation	Stop current operation.
GetOperation	Get current operation.
GetGPIO	Get GPIO status.
SetGPO	Trigger output pin
SetRegion	Set RFID frequency/country.
GetRegion	Get reader RFID frequency/country.

For more details, please refer to the link below:

<https://www.arizontw.com/product-AL-800-AL-800.html>

## 5 Set up your hardware

### 5.1 Appearance description

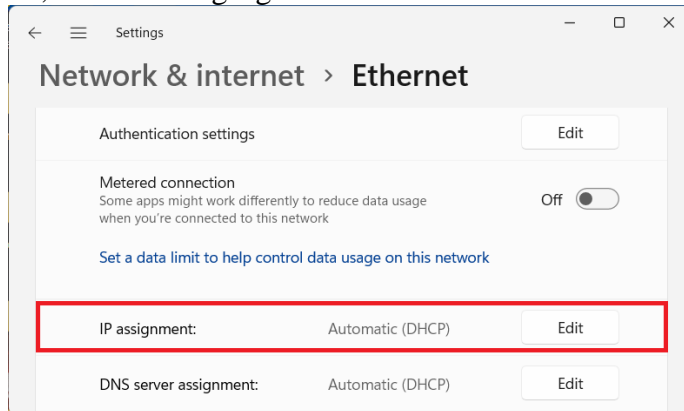


1. **Power indicator**– On indicates power and off indicates no power.
2. **System Status indicator**– Flashing indicates that the system is powering on, and constant light indicates that the power-on is complete.
3. **System Update indicator**– A quick flash indicates a restore to a preset value in progress, and a slow flash indicates an update in progress  
(\*Warning: Do not turn off the power when this light is blinking!)
4. **RF Status indicator**– Standby mode when blinking slowly and RF signals being emitted when blinking fast.
5. **Receive indicator**– Fast flashing indicates that a UHF tag has been received.
6. **Wi-Fi indicator** – Illuminates to indicate that Wi-Fi is enabled, flashing indicates that communication is in progress, and off indicates that Wi-Fi is disabled.
7. **Antenna 4** – TNC connector with impedance 50Ω.
8. **Antenna 3** – TNC connector with impedance 50Ω.
9. **Antenna 2** – TNC connector with impedance 50Ω.
10. **Antenna 1** – TNC connector with impedance 50Ω.
11. **DC power JACK** – Input voltage 24V / 1.2A power supply.
12. **Reset Button** – Reboot the system on time, press and hold until the system update indicator blinks rapidly and then release to restore the unit to the factory setting.
13. **USB Device**– For RFID function communication, using a HID interface.
14. **USB Host**– Can be connected to USB stickers, VCP, 4G LTE Dongle and more.
15. **RJ-45 Ethernet** – Used to communicate with RFID function and supports 10/100Mbps twisted pair network cables above Cat.5E.
16. **Micro SD** – supports SDHC up to 64GB.
17. **Console** – The internal Linux system can be operated using TTY.
18. **GPIO D-SUB**– Connect to an external GPIO control box for use.
19. **Wi-Fi Antenna** – Connects an SMA specification 2.4GHz antenna.

## 20. Reserved Antenna.

### 5.2 Connect to the AL-800

AL-800 default built-in DHCP server, the computer please keep the network adapter settings automatically get DHCP, the following figure is Windows 11 network interface settings.



The default IP address and web login information for the AL-800 are as follows:

URL: <https://192.168.50.1/>

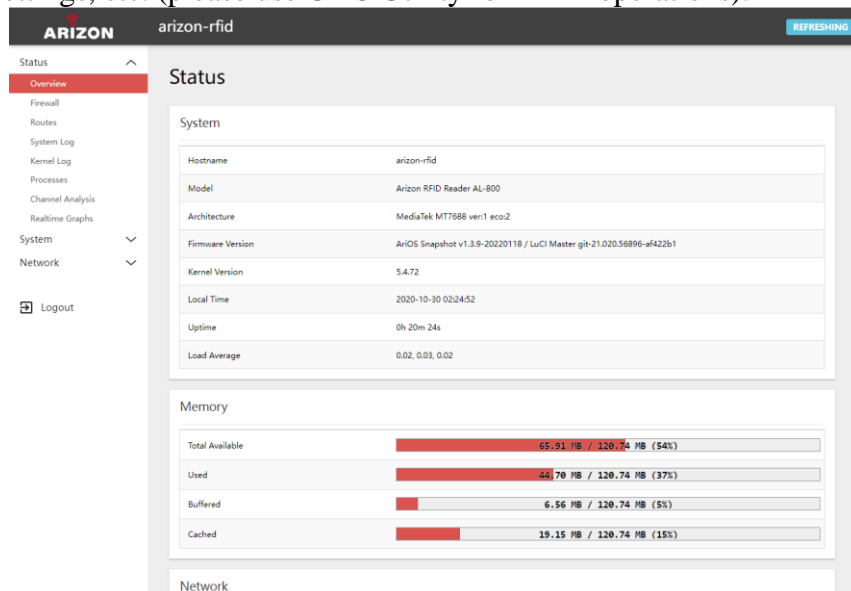
IP Address: 192.168.50.1

User account: root

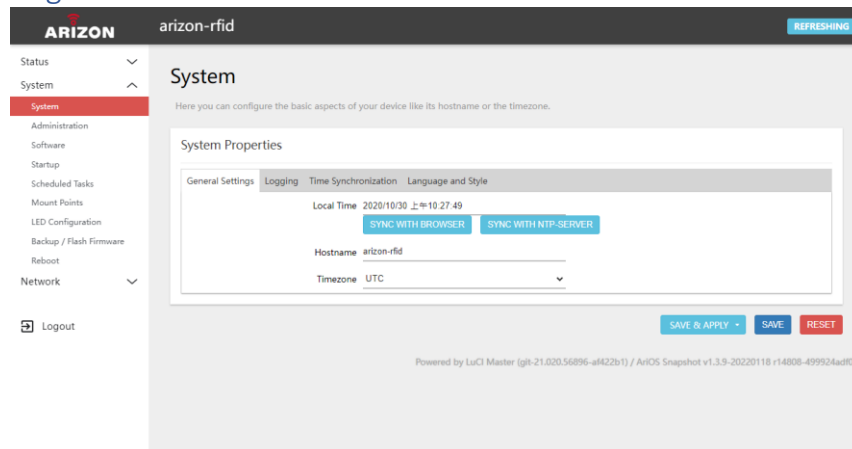
Password : 123456

(For more detail about Network Settings, please refer to Section [5.8](#))

The AL-800 web control panel provides network settings, firmware updates, system settings, time and date settings, etc. (please use URC Utility for RFID operations).



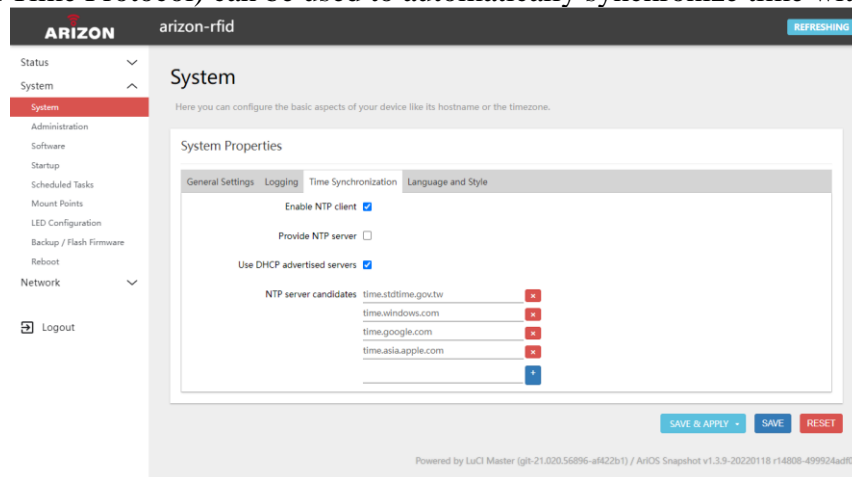
## 5.3 Time Setting



1. Log in to the web control panel.
2. Click the **System** tab in the left menu.
3. Select **System**.
4. For the **general date and time** setting in the **system properties**, you can choose the following two setting methods:
  - 4.1 **Synchronize time with the browser (computer).**
  - 4.2 **Synchronize time with NTP server** (AL-800 requires a connection to the network).
5. Select the **time zone** you want.
6. Press **Save and Apply Settings**.

### ➤ NTP Setting

NTP (Network Time Protocol) can be used to automatically synchronize time with the server.



1. Log in to the web control panel.
2. Click the **System** tab in the left menu.
3. Select **System**.
4. Click the **Time Synchronization** tab.
5. Tick **Enable NTP Client**. (\*To use the local area network automatically, select a **server that uses DHCP advertising**)
6. In **Alternate NTP Server**, enter a list of destination servers that you want to synchronize.
7. Press **Save and Apply Settings**.

## 5.4 Set the account password

Changing the default account password prevents unauthorized modification of device settings.

The screenshot shows the ARIZON web control panel for 'arizon-rfid'. The left sidebar contains a menu with 'System' expanded, showing 'Administration' (highlighted), 'Software', 'Startup', 'Scheduled Tasks', 'Mount Points', 'LED Configuration', 'Backup / Flash Firmware', 'Reboot', and 'Network'. The main content area is titled 'Router Password' and includes a subtitle 'Changes the administrator password for accessing the device'. It features two input fields: 'Password' and 'Confirmation', each with a toggle icon. A 'SAVE' button is located at the bottom right. At the very bottom, a footer line reads: 'Powered by LuCI Master (git-21.020.56896-a4422b1) / ArLOS Snapshot v1.3.3-20220118 r14808-499924ad0'.

1. Log in to the web control panel.
2. Click the **System** tab in the left menu.
3. Select **Administration**.
4. In Router Password, enter the new password
5. Press **Save** and **Apply Settings**.

## 5.5 Mount a USB storage device and Micro-SD card

The AL-800 supports connecting external storage space from a USB storage device or Micro-SD slot, and the following explains how to attach storage to an internal archive system.

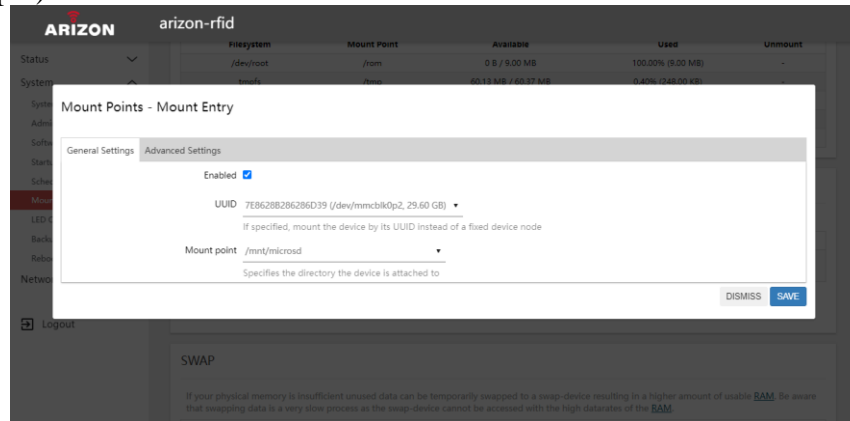
The screenshot shows the ARIZON web control panel for 'arizon-rfid'. The left sidebar is the same as in the previous image. The main content area is titled 'Mounted file systems' and contains a table with the following data:

Filesystem	Mount Point	Available	Used	Unmount
/dev/root	/rom	0 B / 9.00 MB	100.00% (9.00 MB)	-
tmpfs	/tmp	60.13 MB / 60.37 MB	0.40% (248.00 KB)	-
/dev/mtdblock6	/overlay	4.52 MB / 4.81 MB	6.09% (300.00 KB)	-
overlayfs/overlay	/	4.52 MB / 4.81 MB	6.09% (300.00 KB)	-
tmpfs	/dev	\$12.00 KB / \$12.00 KB	0.00% (0 B)	-

Below the table is a section titled 'Mount Points' with a subtitle 'Mount Points define at which point a memory device will be attached to the filesystem'. It contains a table with headers: 'Enabled', 'Device', 'Mount point', 'Filesystem', 'Mount options', and 'Run filesystem check'. The table body is empty, with a message 'This section contains no values yet'. An 'ADD' button is located below the table. At the bottom of the main content area is a section titled 'SWAP' with a subtitle 'If your physical memory is insufficient unused data can be temporarily swapped to a swap-device resulting in a higher amount of usable RAM. Be aware that swapping data is a very slow process as the swap-device cannot be accessed with the high datarates of the RAM.' It contains a table with headers 'Enabled' and 'Device', which is also empty.

1. Plug in a USB storage device or Micro-SD memory
2. Log in to the web page background.
3. Click the **System** tab in the left menu.
4. Select **Mount points**.
5. In **Mount Points**, click **Add New**.
6. After the Enable check box is selected, select the corresponding disk area from **the device universal unique identification code UUID**. (MicroSD is usually /dev/mmcblk0p[N], where [N] is the disk number of the memory card, the example in the picture is

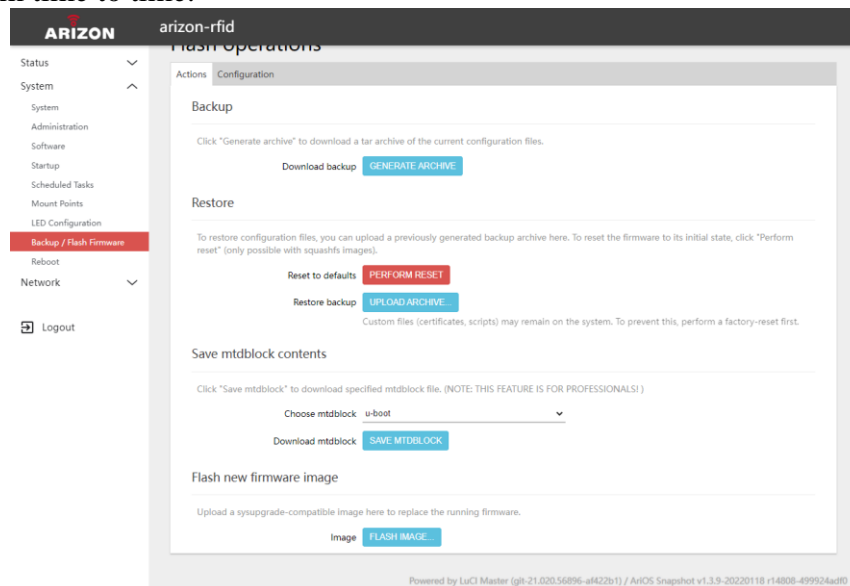
mmcblk0p2.)



7. Select Custom at the **mount point**, enter /mnt/[Custom Name], and press **Save**.
8. After pressing **Save** and **Apply**, it takes effect immediately.

## 5.6 Upgrades the firmware

In order to ensure system stability and introduce new features, new versions of the firmware will be released from time to time.



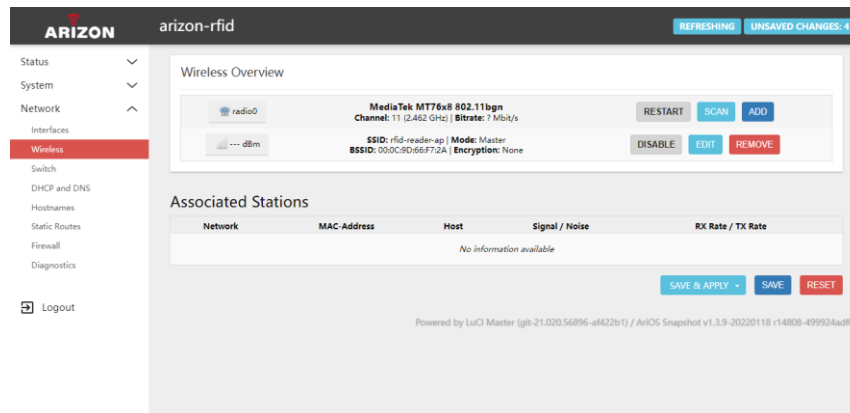
1. Log in to the web page background.
2. Click the **System** tab in the left menu.
3. Select **Backup/Flash Firmware**.
4. In **Flash new firmware image**, click **Flash Image File**.
5. Press **Browse** to select the image file and click **Upload**.



6. Follow the on-screen instructions to continue with the update, and do not interrupt the power supply during the update, otherwise it will cause damage to the firmware.

## 5.7 Set Wi-Fi to client mode

The AL-800 supports 802.11 b/g/n wireless networks, the default is access point mode to accept connections from other computers, you can switch the AL-800 to client mode and connect to other networks.



1. Log in to the web control panel.
2. Click on the **Network** tab in the left menu.
3. Select **Wireless**.
4. In the **Wireless Overview**, click **Scan**.
5. Press Join Network in the network you want to connect to.

Join Network: Wireless Scan						
Signal	SSID	Channel	Mode	BSSID	Encryption	
-80 dBm	hidden	8	Master	1A:59:C0:44:62:26	WPA2 PSK (CCMP)	JOIN NETWORK
-80 dBm	hidden	8	Master	1E:59:C0:44:62:26	WPA2 PSK (CCMP)	JOIN NETWORK
-83 dBm	hidden	8	Master	02:0C:9D:C1A5:2C	None	JOIN NETWORK
-83 dBm	hidden	9	Master	8A:07:86:C6:26:9D	WPA2 PSK (CCMP)	JOIN NETWORK
-84 dBm	hidden	9	Master	D8:07:86:C6:26:98	WPA2 PSK (CCMP)	JOIN NETWORK
-93 dBm	hidden	8	Master	1E:59:C0:45:B1:51	WPA2 PSK (CCMP)	JOIN NETWORK

6. Enter your **network password** and click Submit.

Joining Network:

Replace wireless configuration ☒

Check this option to delete the existing networks from this radio.

Name of the new network

wwan

The allowed characters are: A-Z, a-z, 0-9 and

WPA passphrase

.....

Specify the secret encryption key here.

Lock to BSSID ☐

Instead of joining any network with a matching SSID, only connect to the BSSID 1A:59:C0:44:62:26.

Create / Assign firewall zone

wan (empty?)

Choose the firewall zone you want to assign to this interface. Select unspecified to remove the interface from the associated zone or fill out the custom field to define a new zone and attach the interface to it.

CANCEL

SUBMIT



- The details window appears, if you do not need to change other options, please click **Save** directly.

The first screenshot shows the 'Advanced Settings' tab for wireless configuration. It includes fields for Mode (Client), SSID (ARIZON ORBI), and a status indicator. Below this, there's a 'Wireless network is enabled' toggle set to 'DISABLE'. Further down, 'Operating frequency' is set to 'N' (2462 MHz) and 'Width' is set to '20 MHz'. There's an unchecked checkbox for 'Allow legacy 802.11b rates'. At the bottom, 'Maximum transmit power' is set to 'driver default' with a note about regulatory requirements.

The second screenshot shows the 'Interface Configuration' tab. It has a 'Mode' dropdown set to 'Client'. Below it are input fields for 'ESSID' and 'BSSID'. At the bottom, there's a 'Network' dropdown set to 'wwan' and a note about choosing a network to attach to.

- After clicking Save and Apply, wait about 80 seconds for it to take effect.

## 5.8 Set up Ethernet

The AL-800 has a full-duplex 10/100Mbps Ethernet jack, the default IP address is 192.168.50.1 and the DHCP server is enabled, you can change the settings as needed.

The screenshot shows the 'arizon-rfid' web interface. On the left is a sidebar menu with options: Status, System, Network, Interfaces (highlighted), Wireless, Switch, DHCP and DNS, Hostnames, Static Routes, Firewall, and Diagnostics. The main content area is titled 'Interfaces' and shows two network interfaces: 'LAN' and 'WWAN'. The 'LAN' interface has a static IP address of 192.168.50.1/24. The 'WWAN' interface has a DHCP client protocol and an IP address of 10.35.1.70/24. Each interface has buttons for 'RESTART', 'STOP', 'EDIT', and 'DELETE'. At the bottom, there are buttons for 'ADD NEW INTERFACE', 'SAVE & APPLY', 'SAVE', and 'RESET'. A footer note mentions the device is powered by LuCI Master and ArIOS Snapshot.

Please follow the instructions below to reach this page first:

- Log in to the web page background.
- Click on the **Network** tab in the left menu.
- Select **Interfaces**.

**A. Change to automatically obtain the IP location (the DHCP server will be deactivated) :**

1. Click **Edit** at **LAN**.
2. In the General Settings tab, change the **protocol** to **DHCP client**.
3. Click **Switch Protocol** to refresh the screen to the corresponding setting parameters.

The screenshot shows the 'Interfaces > LAN' configuration page. The 'General Settings' tab is active. It displays the status of the 'br-lan' device, including its uptime, MAC address, RX/TX statistics, and current IP address (192.168.50.1/24). The 'Protocol' is set to 'DHCP client'. There is a 'Bring up on boot' checkbox which is checked. At the bottom, there is a 'Hostname to send when requesting DHCP' dropdown menu. 'DISMISS' and 'SAVE' buttons are at the bottom right.

4. Click **Save**.
5. Click **Save** and **Apply** to make the settings take effect.

**B. Change to automatically obtain the IP location (the DHCP server will be deactivated) :**

1. Click **Edit** on **LAN**.
2. In the general settings tab, change the **protocol** to **static address**.
3. Click **Switch Protocol** to refresh the screen to the corresponding setting parameters.
4. Please enter the parameters you want to change, such as the IPv4/v6 address, IPv4 gateway, etc.
5. Please click the **DHCP Server** tab.
6. On the **General Settings** tab, select **Ignore Interfaces** and check this interface.  
(\*This setting will disable the DHCP server, if you want the AL-800 to assign an IP address, please uncheck it)

The screenshot shows the 'Interfaces > LAN' configuration page with the 'DHCP Server' tab selected. Under the 'General Setup' sub-tab, the 'Ignore interface' checkbox is checked. Below this checkbox, it says 'Disable DHCP for this interface.' 'DISMISS' and 'SAVE' buttons are at the bottom right.

7. Click **Save**.
8. Click **Save** and **Apply** to make the settings take effect.

## 6 Setup your AWS account and Permissions

Refer to the online AWS documentation at [Set up your AWS Account](#). Follow the steps outlined in the sections below to create your account and a user and get started:

- [Sign up for an AWS account](#) and
- [Create a user and grant permissions](#)
- [Open the AWS IoT console](#)

Pay special attention to the Notes.

## 7 Create Resources in AWS IoT

Refer to the online AWS documentation at [Create AWS IoT Resources](#). Follow the steps outlined in these sections to provision resources for your device:

- [Create an AWS IoT Policy](#)
- [Create a thing object](#)

Pay special attention to the Notes.

## 8 Connect AL-800 reader to AWS IoT Core

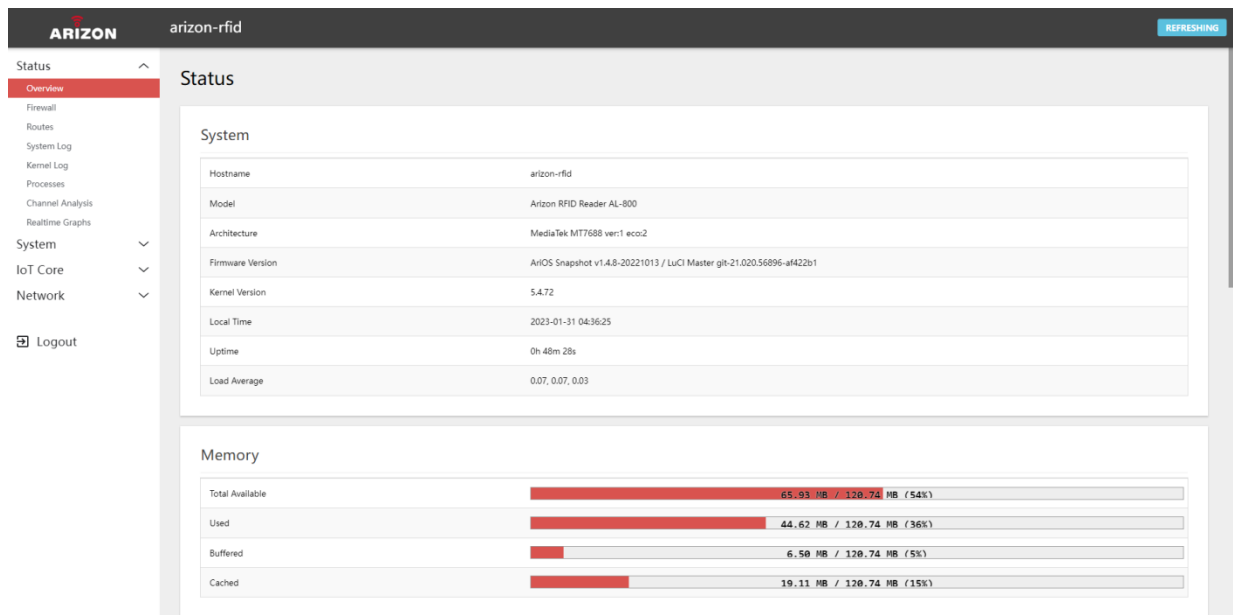
### 8.1 Connect AL-800 reader to AWS IoT Core

*Step1.* Use the Ethernet crossover cable (This crossed cable is not included in the standard kit, so you should provide it) to connect AL-800 to your computer.

*Step2.* URL: <https://192.168.50.1/cgi-bin/luci/>.

The screenshot shows the web interface of the Arizon RFID reader. At the top, there is a header with the 'ARIZON' logo and the text 'arizon-rfid'. The main content area is titled 'Authorization Required' and contains a login form. The form has two input fields: 'Username' with the value 'root' and 'Password'. Below the fields are two buttons: 'LOGIN' (blue) and 'RESET' (orange). At the bottom right of the page, there is a small text string: 'Powered by LuCI Master (git-21.020.56896-af422b1) / ArIoT Snapshot v1.4.8-20221013 r14808-499924ad0'.

*Step3.* Sign in with the user name and password. Welcome to the main page.



**Step4.** Choose page **IoT Core** → **AWS**

**ARIZON** arizon-rfid

Status  
System  
IoT Core  
Azure  
**AWS**  
Network  
Logout

### AWS IoT Core

Connect AWS IoT Core

**Device**

Device name: AL-800

Data endpoint: a399e16ptafkvv-ats.iot.us-west-2.amazonaws.com

Device certificate: /ETC/UPLOADS/AWS/8TE...3A6C9-CERTIFICATE.PEM.CRT (1.22 KB)

Private key file: /ETC/UPLOADS/AWS/8TE...07993A6C9-PRIVATE.PEM.KEY (1.68 KB)

Root CA certificate: /ETC/UPLOADS/AWS/AMAZONROOTCA1.PEM (1.19 KB)

Operation: Disable

**Event**

Event Topic: devices/AL-800/messages/events/tags

MQTT Topic

Response interval: 5

Tag count: 20

SAVE & APPLY SAVE RESET

Powered by LuCI Master (gh-21.020.56896-a422b1) / Atheros Snapshot v1.4.8-20221013 r14808-499524a80

**Step5.** Create a thing in AWS IoT Core (Chapter 6, 7). Edit device information, and upload certificate.

- Device name
- Data endpoint
- Device certificate
- Private key file
- Root CA certificate

**ARIZON** arizon-rfid

Status  
System  
IoT Core  
Azure  
**AWS**  
Network  
Logout

### AWS IoT Core

Connect AWS IoT Core

**Device**

a Device name: AL-800

b Data endpoint: a399e16ptafkvv-ats.iot.us-west-2.amazonaws.com

c Device certificate: /ETC/UPLOADS/AWS/8TE...3A6C9-CERTIFICATE.PEM.CRT (1.22 KB)

d Private key file: /ETC/UPLOADS/AWS/8TE...07993A6C9-PRIVATE.PEM.KEY (1.68 KB)

e Root CA certificate: /ETC/UPLOADS/AWS/AMAZONROOTCA1.PEM (1.19 KB)

Operation: Disable

**Event**

Event Topic: devices/AL-800/messages/events/tags

MQTT Topic

Response interval: 5

Tag count: 20

SAVE & APPLY SAVE RESET

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- Step6.** Edit event configuration. MQTT Topic: **devices/AL-800/messages/events/tags**
- Response interval (second)
  - Tag count

**ARIZON** arizon-rfid

Status  
System  
IoT Core  
Azure  
**AWS**  
Network  
Logout

### AWS IoT Core

Connect AWS IoT Core

**Device**

Device name: AL-800

Data endpoint: a399e16p1a9kvv-ats.iot.us-west-2.amazonaws.com

Device certificate: iETCLUCI-UPLOADS/AWS/8TE...3A6C9-CERTIFICATE PEM CRT (1.22 KB)

Private key file: iETCLUCI-UPLOADS/AWS/8TE...07993A6C9-PRIVATE PEM KEY (1.68 KB)

Root CA certificate: iETCLUCI-UPLOADS/AWS/AMAZONROOTCA1.PEM (1.19 KB)

Operation: Disable

**Event**

a Event Topic: devices/AL-800/messages/events/tags  
MQTT Topic

b Response interval: 5

Tag count: 20

SAVE & APPLY SAVE RESET

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**Step7.** Set operation **Enable**. Click 「**Save**」 and 「**Save and Apply**」

**ARIZON** arizon-rfid

Status  
System  
IoT Core  
Azure  
**AWS**  
Network  
Logout

### AWS IoT Core

Connect AWS IoT Core

**Device**

Device name: AL-800

Data endpoint: a399e16p1a9kvv-ats.iot.us-west-2.amazonaws.com

Device certificate: iETCLUCI-UPLOADS/AWS/8TE...3A6C9-CERTIFICATE PEM CRT (1.22 KB)

Private key file: iETCLUCI-UPLOADS/AWS/8TE...07993A6C9-PRIVATE PEM KEY (1.68 KB)

Root CA certificate: iETCLUCI-UPLOADS/AWS/AMAZONROOTCA1.PEM (1.19 KB)

Operation: **Enable**

**Event**

Event Topic: devices/AL-800/messages/events/tags  
MQTT Topic

Response interval: 5

Tag count: 20

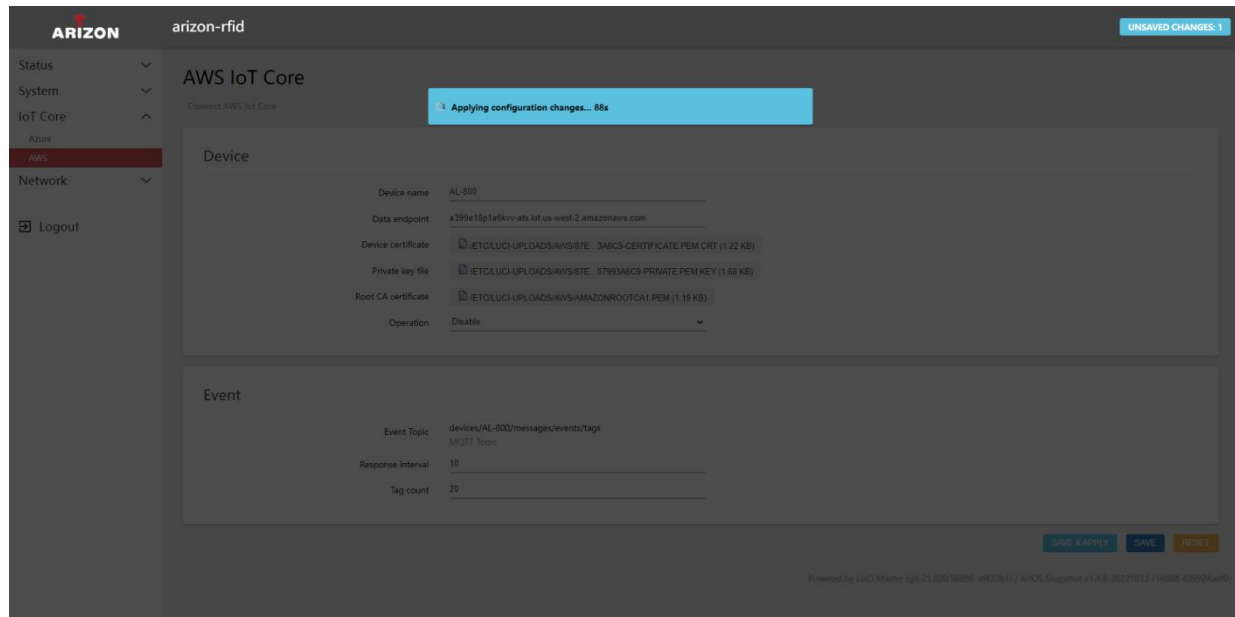
1. Save

2. SAVE & APPLY

SAVE & APPLY SAVE RESET

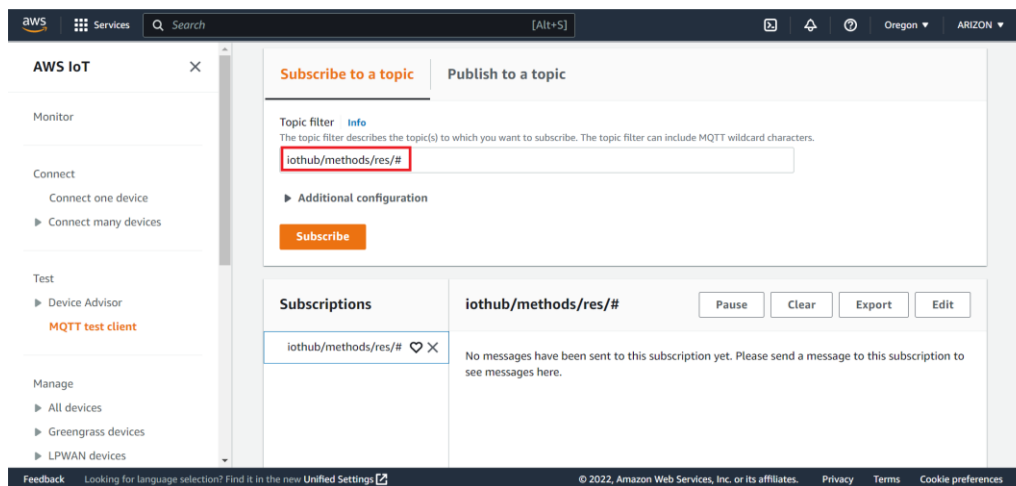
Powered by LuCI Master (gh-21.020.56896-aM22b1) / Atheros Snapshot v1.4.8-20221013 r14808-499924ad0

*Step8.* Apply configuration.

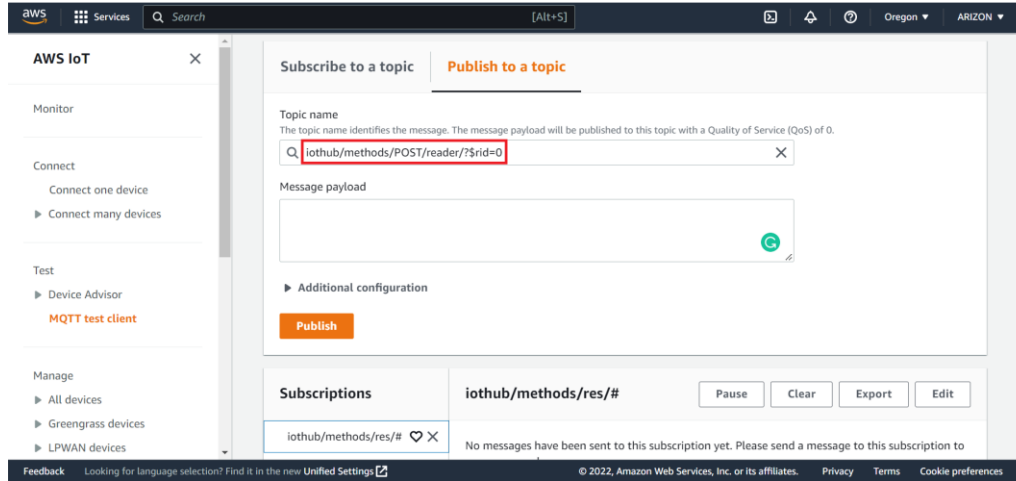


## 8.2 Test your AL-800 reader with AWS MQTT test client

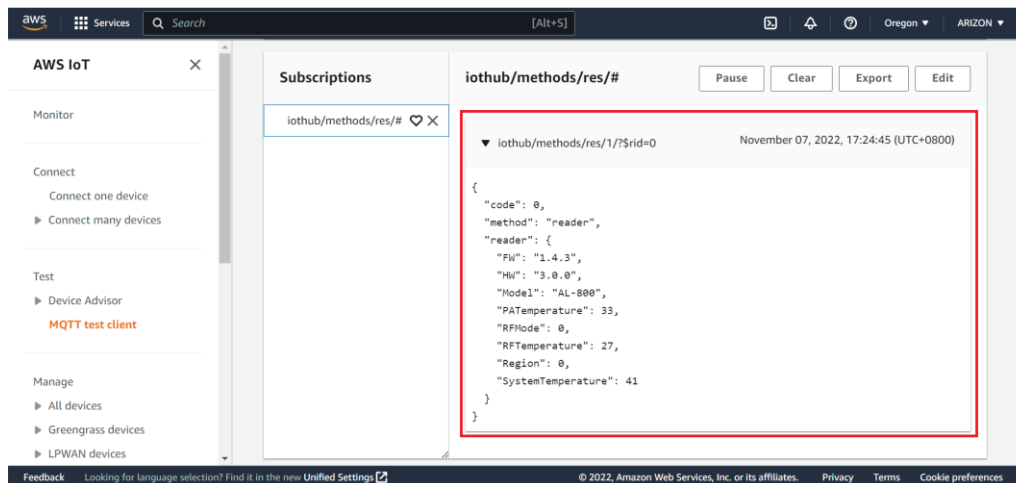
*Step1.* Subscribe to the topic: **iothub/methods/res/#**



*Step2.* Publish to the topic: **iothub/methods/POST/reader/?\$rid=0**



*Step3.* AL-800 response device event via MQTT



*Tags event topic:* **devices/{device name}/messages/events/tags**



## 9 Debugging and Troubleshooting

### LED States

Indicator	Description
Power	On indicates power and off indicates no power.
System	Flashing indicates that the system is powering on, and constant light indicates that the power-on is complete.
Update	A quick flash indicates a restore to a preset value in progress, and a slow flash indicates an update in progress. (*Warning: Do not turn off the power when this light is blinking!)
RF Status	Standby mode when blinking slowly and RF signals being emitted when blinking fast.
Receive	Fast flashing indicates that a UHF tag has been received.
Wi-Fi	Illuminates to indicate that Wi-Fi is enabled, flashing indicates that communication is in progress, and off indicates that Wi-Fi is disabled.

### System Log

The instructions for viewing device log through SSH are given below.

1. Connect Ethernet cable from PC to the device
2. Open the terminal(such as: windows command prompt)
3. Input command: `ssh root@192.168.50.1` , Default password: `123456`

View device log

```
root@arizon-rfid:~# cd ..
root@arizon-rfid:/# cd tmp/
root@arizon-rfid:/tmp# ls
root@arizon-rfid:/tmp# nano etk_main_20221220093157.log
```

LOG FILE: `etk_main_{yyyyMMddhhmmss}.log`

```
GNU nano 5.5      etk main 20221220093157.log
[2022-12-20 09:31:57][1812][CONSOLE][info]URC Main Service For AL-800 V2.4.7
[2023-01-03 05:21:47][1939][CONSOLE][info]/dev/ttyS2: STOPPED

[2023-01-03 05:21:59][1944][CONSOLE][info]configuration successfully written to: /etc/urc_config.cfg
[2023-01-03 05:22:12][1939][CONSOLE][info]/dev/ttyS2: STOPPED

[2023-01-03 05:24:31][1944][CONSOLE][info]/dev/ttyS2: STOPPED

[2023-01-03 05:24:54][1939][CONSOLE][info]/dev/ttyS2: STOPPED
```

### Change Password

For more detail, please refer to Section [5.4](#). Changing the default account password prevents unauthorized modification of device settings.

### Reset Device

Reset Button – Reboot the system on time, press and hold until the system update indicator blinks rapidly and then release to restore the unit to the factory setting.

### IoT Connection

The following information might help you troubleshoot common issues in AWS IoT: [Link to Troubleshooting AWS IoT](#).

Also, feel free to contact us if you have any questions. [Contact Us](#)