

# Configuration Manual

Please read carefully before starting. Also read the product [safety information](#).  
This guide is updated regularly.

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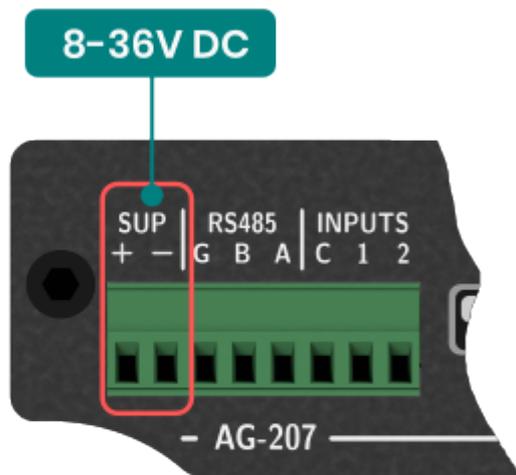
## First start

After unpacking, the gateway is ready to use, but requires configuration to adapt to the required functions.

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## Power supply

First, connect the power supply according to the [power supply](#) information and to the diagram.



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## Opening inbuilt website

Through the WAN interface

To access the built-in website, connect the gateway by WAN to the local network and enter IP address in the address window of the browser. Please note that it may take some time from powering on to booting up the system. When the LEDs next to the RJ45 socket start flashing, after about 10 seconds the built-in website becomes available.

IP: **192.168.10.60**

user name: **root**

password: **root**

## Through the WiFi interface

By default, the gateway creates its own network with default ESSID "AG-207". The network is secured with default password "atreyo12". Connect to this network and enter the IP in the address bar of your browser.

IP: **192.168.1.1**

user name: **root**

password: **root**



After logging in, you are automatically taken to the dashboard page.

- Dashboard
- Status
- Overview
- Routing
- Firewall
- System Log
- Processes
- Channel Analysis
- Realtime Graphs
- System
- Modem
- Services
- Network
- VPN
- Statistics
- Logout

REFRESHING

### Status

**Internet**

Connected

**System**

Hostname	AG-207
Model	Atreyo AG-207
Architecture	MediaTek MT7628AN ver:1 eco:2
Target Platform	ramips/mt76x8
Firmware Version	Atreyo-OpenWrt 1.01 221019 / LuCI unknown version
Kernel Version	5.15.71
Local Time	2023-12-20 05:33:00
Uptime	0h 16m 34s
Load Average	0.25, 0.15, 0.23

**Unique**

Serial number	0920-8754-5270-B4EC
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## Password setting

To secure the gateway, change the default password. Set a password go to the **system>administration** page. To maintain security, it is recommended to use long and complex passwords.

- Dashboard
- Status
- System
- System
- Administration
- ACL Settings
- Software
- Startup
- Scheduled Tasks
- Mount Points
- LED Configuration
- Backup / Flash Firmware
- Custom Commands
- Reboot
- Modem
- Services
- Network
- VPN
- Statistics
- Logout

Router Password SSH Access SSH-Keys HTTP(S) Access

### Router Password

Changes the administrator password for accessing the device

Password

Confirmation

SAVE

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To maintain security, it is recommended to use long and complex passwords.

# Cellular modem

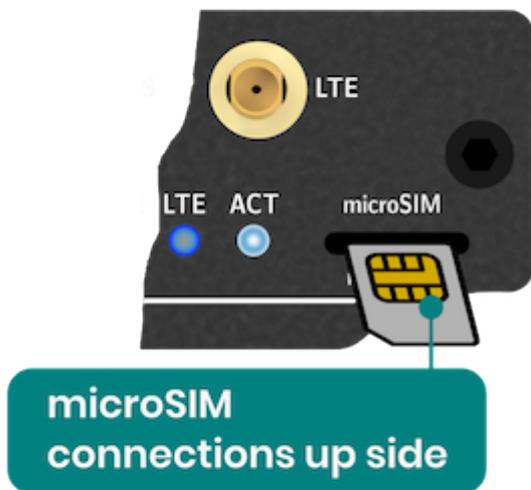
## Modem

The Gateway in its basic configuration is equipped with an LTE modem that also supports GPRS and SMS functions. Different modems were used depending on the model variant. Here is a table of models.

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## SIM card

The Gateway supports one microSIM card, both 1.8V and 3V. The card connector is a push-pull type. When installing the SIM card, pay attention to the correct insertion of the card.



The card can be inserted the other way around and you can have the impression that you have inserted it correctly. So take a close look at the above drawing.

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## Using Cellular Network

To activate the LTE modem, go to **Network > Interfaces** and select the lte tab there.

- Dashboard
- Status
- System
- Modem
- Services
- Network**
  - Interfaces
  - Wireless
  - Switch
  - Routing
  - DHCP and DNS
  - Diagnostics
  - Firewall
  - Tcpdump
  - VPN
  - Statistics
  - Logout

REFRESHING

Interfaces
Devices
Global network options

### Interfaces

<div style="background-color: #00ff00; color: white; padding: 2px; border-radius: 3px; display: inline-block;">lan</div>  br-lan	Protocol: Static address Uptime: 1h 55m 31s MAC: 32:54:52:70:B4:EC RX: 0 B (0 Pkts.) TX: 342 B (1 Pkts.) IPv4: 192.168.1.1/24 IPv6: undefined/0	<div style="display: flex; justify-content: space-between; gap: 5px;"> <span style="background-color: #ccc; padding: 2px 5px;">RESTART</span> <span style="background-color: #ccc; padding: 2px 5px;">STOP</span> <span style="background-color: #008080; color: white; padding: 2px 5px;">EDIT</span> <span style="background-color: #f00; color: white; padding: 2px 5px;">DELETE</span> </div>
<div style="background-color: #ccc; color: white; padding: 2px; border-radius: 3px; display: inline-block;">lte</div>  3g-lte	Protocol: UMTS/GPRS/EV-DO RX: 0 B (0 Pkts.) TX: 0 B (0 Pkts.) <b>Error: Network device is not present</b>	<div style="display: flex; justify-content: space-between; gap: 5px;"> <span style="background-color: #ccc; padding: 2px 5px;">RESTART</span> <span style="background-color: #ccc; padding: 2px 5px;">STOP</span> <span style="border: 2px solid red; background-color: #008080; color: white; padding: 2px 5px;">EDIT</span> <span style="background-color: #f00; color: white; padding: 2px 5px;">DELETE</span> </div>
<div style="background-color: #f00; color: white; padding: 2px; border-radius: 3px; display: inline-block;">wan6</div>  eth0.2	Protocol: Static address Uptime: 1h 51m 59s MAC: 32:54:52:70:B4:EC RX: 3.92 MB (27520 Pkts.) TX: 2.41 MB (3715 Pkts.) IPv4: 192.168.10.87/24 IPv6: undefined/0	<div style="display: flex; justify-content: space-between; gap: 5px;"> <span style="background-color: #ccc; padding: 2px 5px;">RESTART</span> <span style="background-color: #ccc; padding: 2px 5px;">STOP</span> <span style="background-color: #008080; color: white; padding: 2px 5px;">EDIT</span> <span style="background-color: #f00; color: white; padding: 2px 5px;">DELETE</span> </div>

ADD NEW INTERFACE...

SAVE & APPLY
SAVE
RESET

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Mostly the network operator requires you to enter the APN, sometimes it also requires a username and password. Enter the required data and save.

REFRESHING

Interfaces - lte

General Settings
Advanced Settings
Firewall Settings
DHCP Server

Status

Protocol

Bring up on boot

Modem device

Service Type

**Device:** 3g-lte  
 RX: 0 B (0 Pkts.)  
 TX: 0 B (0 Pkts.)  
**Error:** Network device is not present

UMTS/GPRS/EV-DO

/dev/ttyUSB1

LTE

APN

PIN

PAP/CHAP username

PAP/CHAP password

Dial number

Then go to **System > Custom Commands** and click on **Start modem**.

- Dashboard
- Status
- System**
  - System
  - Administration
  - ACL Settings
  - Software
  - Startup
  - Scheduled Tasks
  - Mount Points
  - LED Configuration
  - Backup / Flash Firmware
  - Custom Commands
  - Reboot
- Modem
- Services
- Network
- VPN
- Statistics
- Logout

Dashboard
Configure
Command successful (Code: 0)

### Custom Commands

<b>Start modem</b> <span style="background-color: #009688; color: white; padding: 2px 5px; border: 1px solid red;">RUN SCRIPT COMMAND</span>	<b>Shutdown modem</b> <span style="background-color: #009688; color: white; padding: 2px 5px;">RUN SCRIPT COMMAND</span>	<b>Format NAND and create as EXTROOT</b> <span style="background-color: #009688; color: white; padding: 2px 5px;">RUN SCRIPT COMMAND</span>
<b>Delete EXTROOT from NAND</b> <span style="background-color: #009688; color: white; padding: 2px 5px;">RUN SCRIPT COMMAND</span>	<b>Format NAND and mount as /nand in r...</b> <span style="background-color: #009688; color: white; padding: 2px 5px;">RUN SCRIPT COMMAND</span>	<b>Restore NAND as EXTROOT</b> <span style="background-color: #009688; color: white; padding: 2px 5px;">RUN SCRIPT COMMAND</span>
<b>Show mounted block devices</b> <span style="background-color: #009688; color: white; padding: 2px 5px;">RUN SCRIPT COMMAND</span>	<b>Show space on mounted devices</b> <span style="background-color: #009688; color: white; padding: 2px 5px;">RUN SCRIPT COMMAND</span>	<b>Test all LEDs</b> <span style="background-color: #009688; color: white; padding: 2px 5px;">RUN SCRIPT COMMAND</span>
<b>List devices USB</b> <span style="background-color: #009688; color: white; padding: 2px 5px;">RUN SCRIPT COMMAND</span>	<b>Turn GPS antenna to active mode</b> <span style="background-color: #009688; color: white; padding: 2px 5px;">RUN SCRIPT COMMAND</span>	<b>Turn GPS antenna to passive mode</b> <span style="background-color: #009688; color: white; padding: 2px 5px;">RUN SCRIPT COMMAND</span>
<b>Activate GPS on ttyUSB7</b> <span style="background-color: #009688; color: white; padding: 2px 5px;">RUN SCRIPT COMMAND</span>	<b>Show GPS location</b> <span style="background-color: #009688; color: white; padding: 2px 5px;">RUN SCRIPT COMMAND</span>	

The modem will start up and connect to the Internet. To check if it is working properly and what the signal is, go to **Modem > Information about 3G/4G/5G connection**.

- Dashboard
- Status
- System
- Modem**
  - Information about 3G/4G/5G connection
  - SMS Messages
- Services
- Network
- VPN
- Statistics
- Logout

Details
USB debug information
Configuration
REFRESHING

### 3ginfo-lite

More information about the 3ginfo on the [eko.one.pl](http://eko.one.pl) forum.

<b>General Information</b>	
Signal strength	93%
Operator	JIO 4G
SIM status	Registered
Connection statistics	🔄 0d, 00:00:43   ▼ 1.7 KiB ▲ 2.8 KiB
Technology	LTE
<b>Modem Information</b>	
Modem type	-
Revision / Firmware	-
IP address / Communication Port	/dev/ttyUSB6
Protocol	-

## Cellular modem ON on start

To make the gateway automatically connect to the Internet after startup, you need to add a modem startup in the **System > Startup section** under **Local Startup**, add a line before line **'exit 0'**. `/usr/commands/start_modem.sh`. Then save the changes. After each reboot, the gateway will automatically start the modem.



```
# Put your custom commands here that should be executed once
# the system init finished. By default this file does nothing.

/usr/commands/start_modem.sh
exit 0
```

## SMS

To test the SMS operation, the gateway has an SMS interface installed. Under **Modem > SMS Messages**. There you can check sent and received SMS. Be sure to enter the phone number together with the country prefix, but without the + sign. The maximum number of characters is 160. The system does not support alphabets such as devanagari. The maximum number of messages in the inbox is 20.

For send SMS go to **Send Message** tab.

## System statistics

The gateway has a built-in real-time statistics system under Status > Realtime Graphs and accurate statistics with selectable time range under Statistics > Graph. You can check CPU load, memory usage, network load, etc.

## Realtime Load

## Statistics Interfaces

## Statistics Memory

## Statistics Processor

## Statistics System Load

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## Modbus

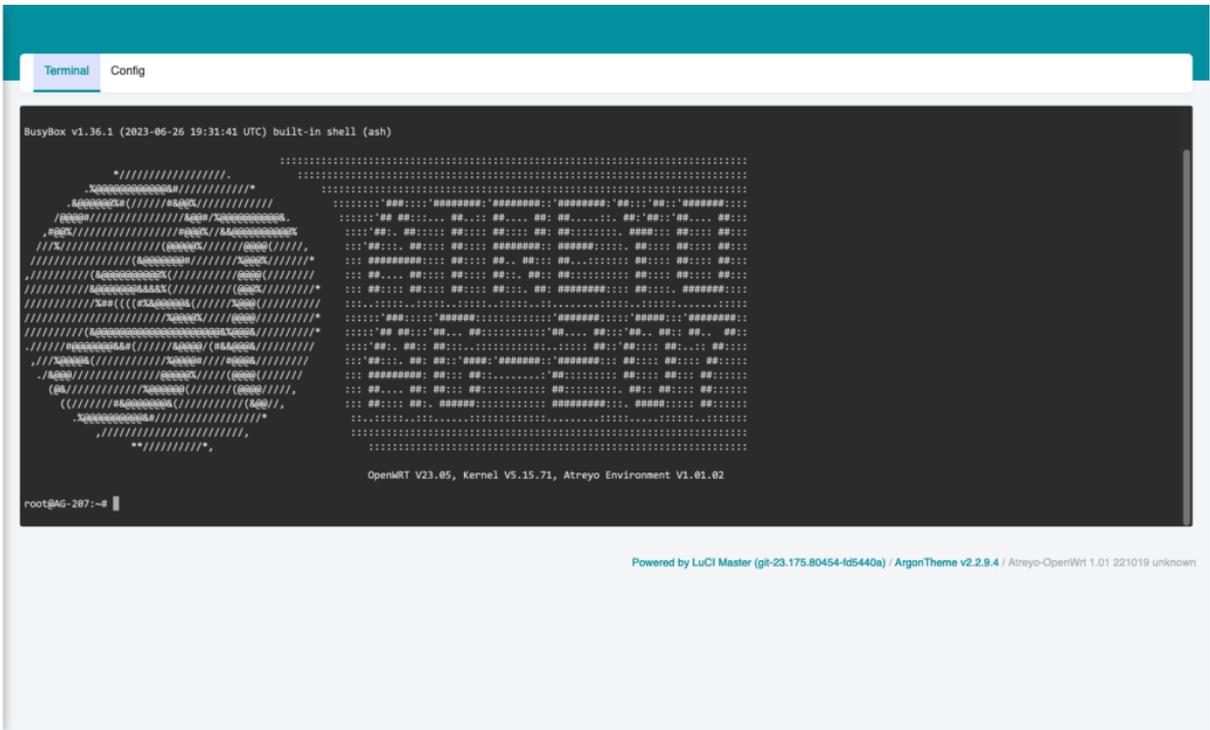
The Gateway has a very advanced Modbus application with a convenient graphical interface. Below are the capabilities of the application:

- Modbus TCP/IP and Modbus RTU support.
  - Any number of serial ports
  - Support for external USB/serial interfaces
  - JSON, TCP/IP and MQTT string formation
  - Data logging in the event of no connection to a server
  - Storage of all data in internal memory
- 

## Using the terminal

The AG-702 has a built-in bash terminal. With it you can execute all commands in the OpenWRT system. To enter the terminal, go to the **tools > terminal** section on the built-in website. The default password is the same **root/root**.

- Dashboard
- Status >
- System >
- Modem >
- Services** ▾
  - Modbus Device
  - Modbusbridge
  - Internet Detector
  - Apinger
  - ser2net
  - Terminal
  - uHTTPd
- Network >
- VPN >
- Statistics >
- Logout



## Reset and default

### Make factory default

To reset the system to factory settings, hold down the "Default/Reset" button for more than 5 seconds while the device is operational. During the factory reset, all LED indicators will light up for 2 seconds.

### Reset device

To restart the gateway without disconnecting the power supply, press and hold the "Reset/Default" button for less than 5 seconds. During the restart, 4 LED indicators will light up for 1 second (IN-1, IN-2, RS485, RS232)

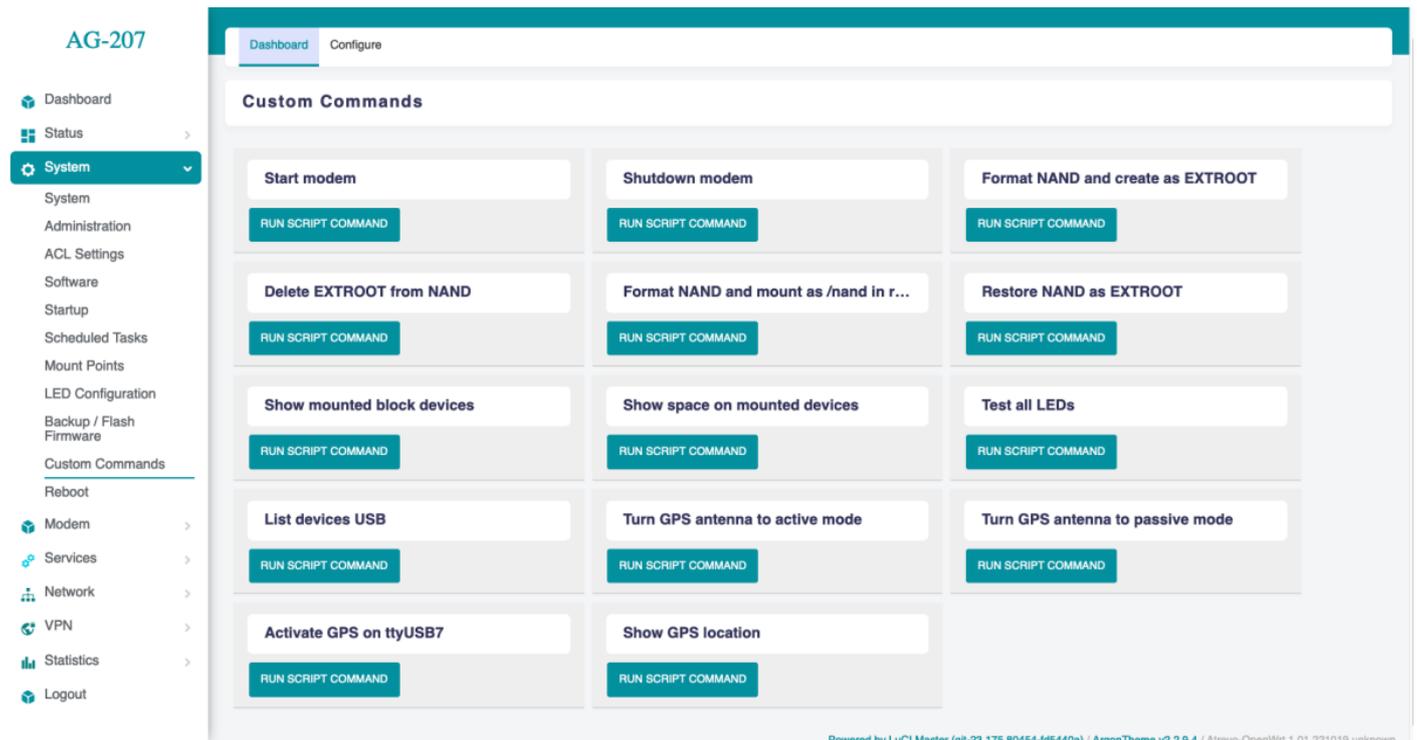
Do not hold the button for more than 5 seconds, as it will trigger the gateway to restore default settings.

## Storage overlay

### How to make a storage overlay

AG-207 has a 512MB NAND memory in addition to the 64MB FLASH memory. It is possible in a very simple way to increase the memory by extending the system partition to the so-called overlay.

To do this, go to the **System > Custom Commands** section and select **Format NAND and create as EXTROOT** and **create as EXTROOT**. Then wait a while for the operation to complete when on bottom of page "Waiting for command to complete..." will close. The formatting process takes a few minutes.



Then, to verify, go to **System > Mounting Points** and see if we have the overlay done correctly.

**Mounted file systems**

Filesystem	Mount Point	Available	Used	Unmount
/dev/root	/rom	0 B / 17.25 MiB	100.00% (17.25 MiB)	-
tmpfs	/tmp	120.55 MiB / 121.15 MiB	0.49% (612.00 KiB)	-
/dev/ubi0_0	/overlay	441.98 MiB / 447.03 MiB	0.07% (336.00 KiB)	-
overlayfs:overlay	/	441.98 MiB / 447.03 MiB	0.07% (336.00 KiB)	-
tmpfs	/dev	512.00 KiB / 512.00 KiB	0.00% (0 B)	-

**Mount Points**

Mount Points define at which point a memory device will be attached to the filesystem

Enabled	Device	Mount point	Filesystem	Mount options	Run filesystem check	
<input checked="" type="checkbox"/>	/dev/ubi0_0	/overlay	ubifs	rw,sync	No	<input type="checkbox"/> <input type="button" value="EDIT"/> <input type="button" value="DELETE"/>

You can also restore partitions to their previous state and format the NAND as data memory. For this isn custom command section click on **Delete EXTROOT from NAND** and after that **Format NAND and mount as /nand in root file**.

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Revision #6

Created 16 February 2025 09:13:31 by Admin

Updated 9 March 2025 10:09:59 by Admin