FlooGoo™ FMA120 Bluetooth Audio Source Dongle

User Guide v1.5

Flairmesh Technologies

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Introduction

LED status	Explanation
Flash slowly	Idle
Flash fast	Searching for pairing
Flash 2 times in 2 seconds	Connected, audio idle
Flash 3 times in 2 seconds	Audio or broadcast streaming

The FMA120 is a dual-mode Bluetooth 5.4 USB audio source dongle that allows users to upgrade their source devices such as phones, laptops, TVs, and various other audio equipment. It adds features like the aptX Adaptive codec and Auracast™ broadcast audio functionality. It also supports low-energy (LE) audio unicast for both music and voice, and is compatible with Bluetooth classic headsets, speakers, and earbuds.

Quick Start

When the dongle is being used for the first time, it will automatically initiate a search for nearby Bluetooth headsets. Please ensure your Bluetooth headsets are also in pairing mode for the connection. Keep them in close proximity, as the dongle will prioritize pairing with the nearest device.

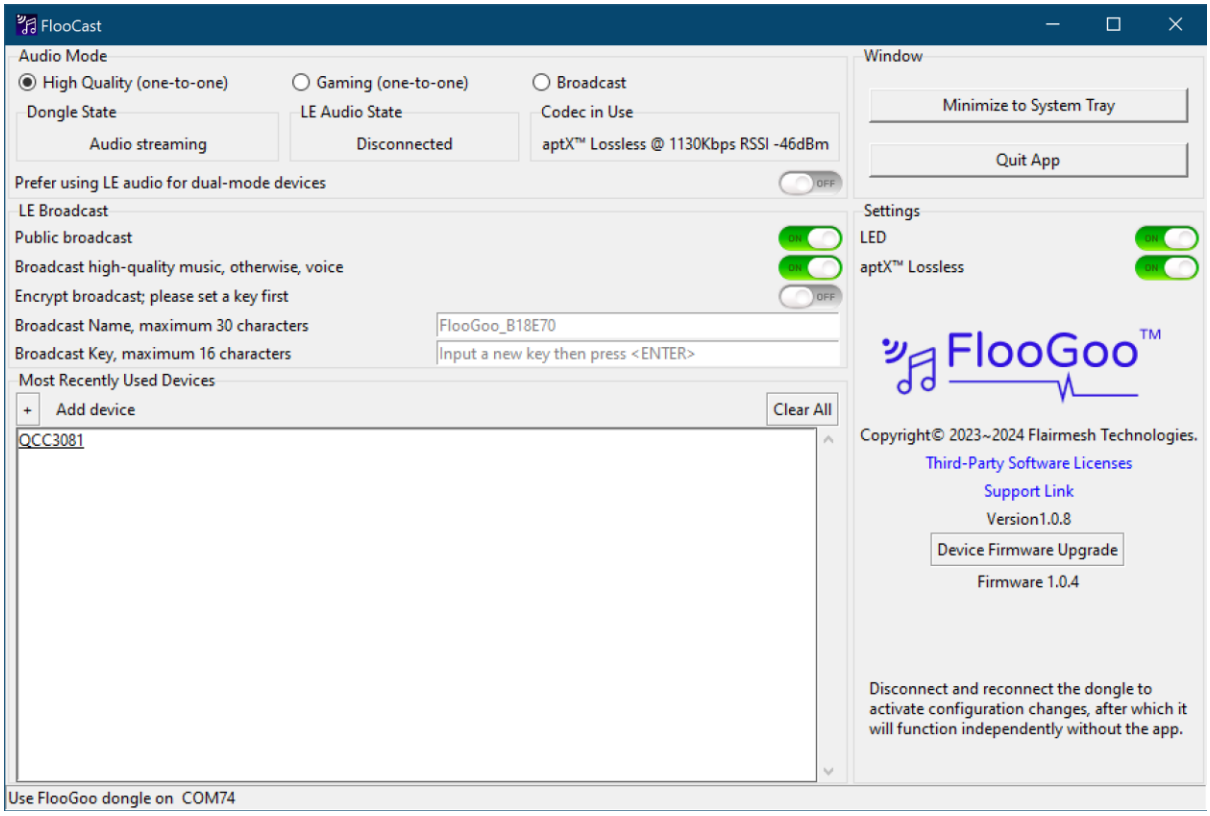
It acts as a standard USB audio device with both speaker and microphone channels. When the OS selects the appropriate channel for music or voice, the dongle sets up a Bluetooth audio connection to transmit data to/from the remote device. For instance, in applications like Skype, which use both the microphone and speaker channels, classic Bluetooth headsets utilize the Hands-Free Profile (HFP), while LE audio headsets use the Telephony and Media Audio Profile (TMAP). In both scenarios, a two-way audio call is established on the headset.

Advanced Functionalities

To access the advanced functions of the dongle, please download the corresponding host app for your system.

For Windows, you can download the app from the Microsoft Store at the following link:
FlooCast on Microsoft Store

For Mac and Linux, the app is available as an open-source GitHub repository provided below:
FlooCast on GitHub



Please note that the device firmware update function is exclusively available in the Windows app.

The dongle has three modes: high quality, gaming, and broadcast. The active codec will be displayed in the 'Codec in Use' panel, along with the overall dongle state in the 'Dongle State' and the low-energy audio state in the 'LE Audio State' panel accordingly. The table below displays the preferred audio codec when supported by the remote device under high-quality and gaming mode. If the preferred codec is not supported by the remote device, SBC is the default for classic Bluetooth devices, while LC3 is the default for LE audio devices.

	Music Unicast		Bi-directional Voice	
	Classic BT	LE Audio	Classic BT	LE Audio
High-quality	aptX Adaptive/Lossless*	LC3*	aptX Voice mSBC/CVSD	LC3*
Gaming	aptX Adaptive	aptX Lite/LC3*	aptX Voice mSBC/CVSD	aptX Lite/LC3*

* aptX Lossless will be enabled automatically when connected to a compatible device. Please also ensure that the sample rate is set as 44.1kHz or 48kHz.
* As LE audio continues to evolve, LC3 support will be added to more headsets and earbuds through firmware updates.

In broadcast mode, LC3 is utilized as mandated by the LE audio standard.

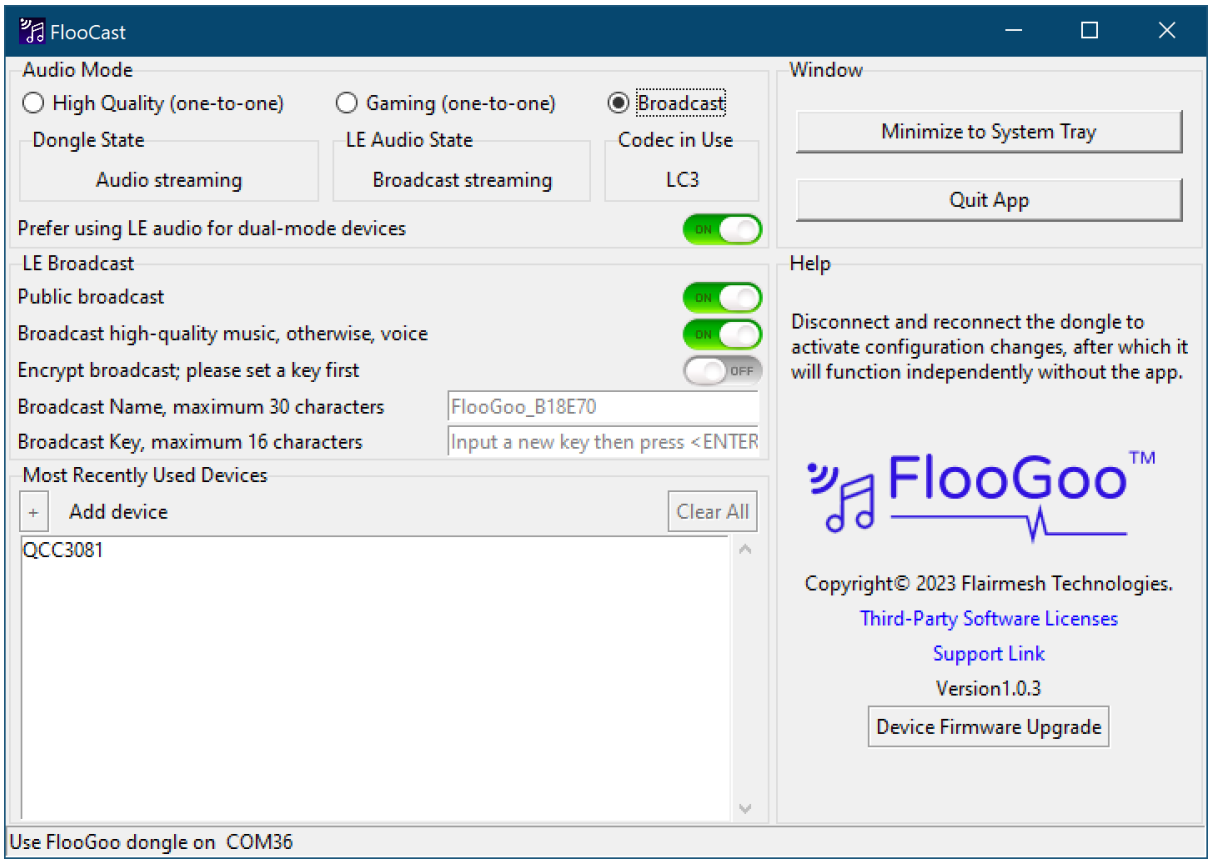
After launching the app, it will retrieve and display the current working mode along with other settings of the dongle.

Altered settings are stored within the dongle, and it will operate with the new settings the next time it powers on. The app is not necessary unless you need to configure new settings.

To manually initiate a new pairing, click the '+' button in the 'Most Recently Used Devices' section, and the dongle will search for the closest Bluetooth headset device in pairing mode, automatically establishing a connection. The name of the paired and connected device will be displayed in the list along with those devices that have been used before.

As the FMA120 is a dual-mode audio source dongle, it can operate with both classic Bluetooth headsets and the latest Bluetooth low-energy audio headsets. For headsets that also support dual-mode, the app allows you to set your preference for either using classic Bluetooth or LE audio to stream audio.

Broadcast mode



Tip: Please select FMA120 as your PC's playback device and start playing some music to enable broadcasting.

There are five settings for LE audio broadcast.

Public broadcast (Auracast™).

When enabled, the public audio broadcast (PBP or Auracast™) feature is activated, and the dongle functions as a Public Broadcast Source (PBS). When disabled, the dongle operates as a Broadcast Media Sender (BMS) as defined in TMAP.

Broadcast high-quality music.

When enabled, the dongle will use a 48 kHz sample rate for music content during broadcasting. When disabled, the dongle will utilize a 16 kHz sample rate for voice content.

Encrypt broadcast.

If enabled, an encryption code is used to restrict access to the broadcast content, similar to a Wi-Fi access code, and only those receivers that know the code can access it.

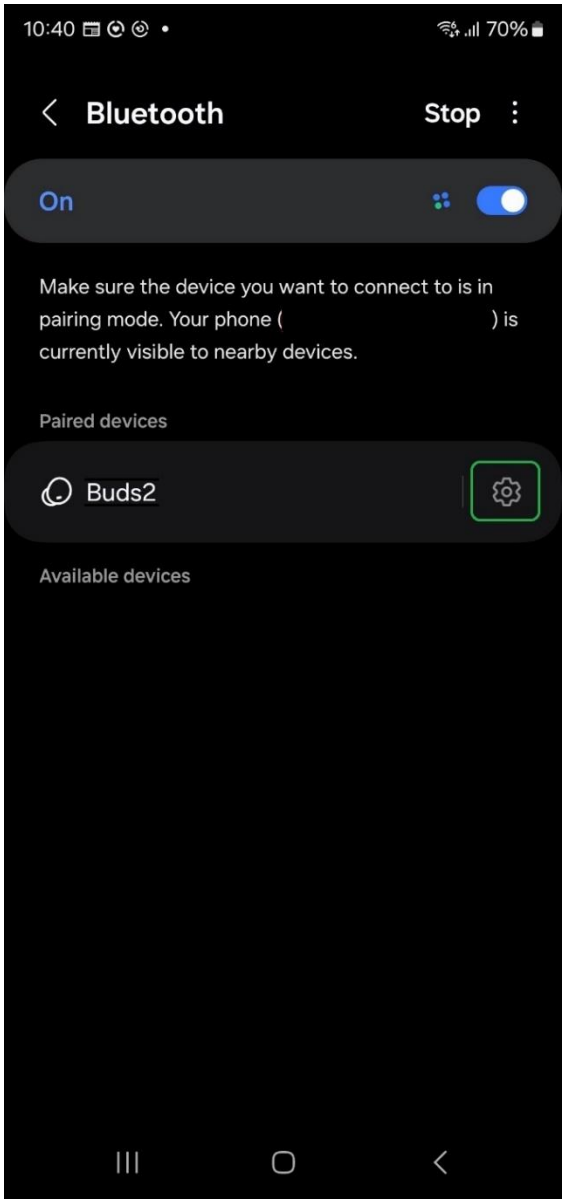
Broadcast name.

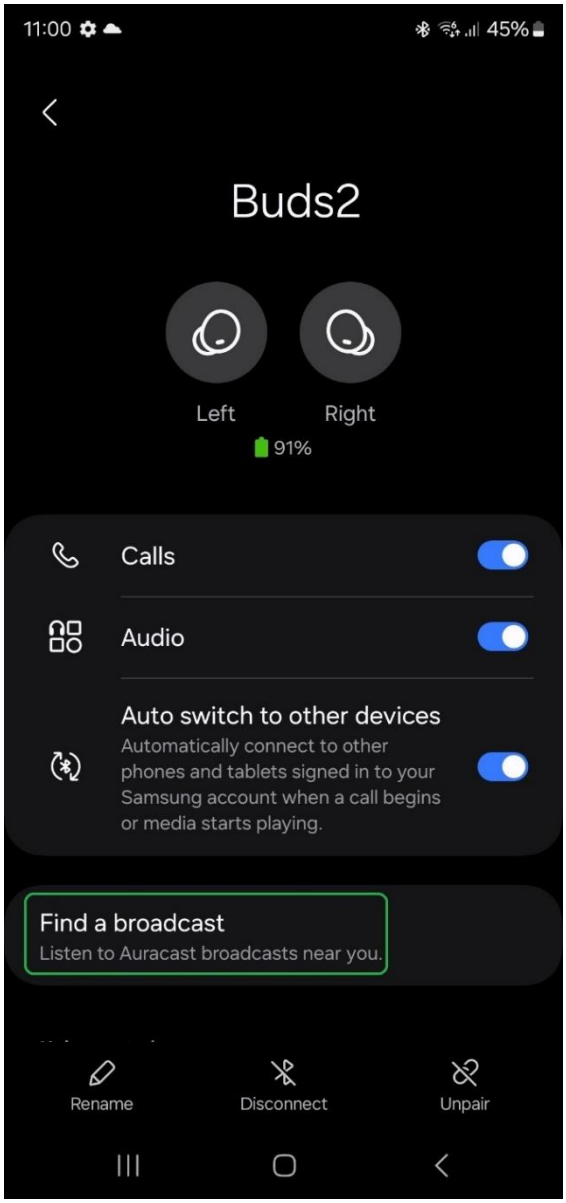
This is a human-readable string for the receiver to distinguish between multiple nearby broadcasters.

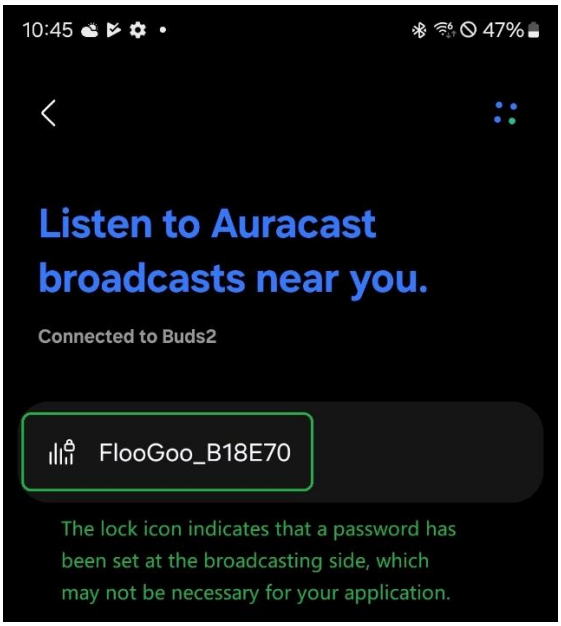
Broadcast code.

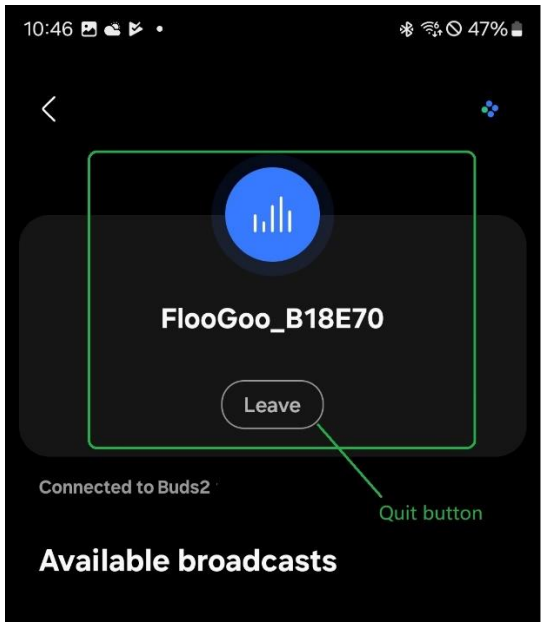
This is an encryption code to be used in the broadcast. When the input code length is less than 16 bytes, it will be padded to 16 bytes with zeros.

To set your headset/earbuds/speaker/hearing aid to listen to Auracast, use an Auracast-compatible phone to pair with your device. Then, open the device's settings and select "Find a broadcast" to set it.


10:40
70%
Bluetooth
Stop
On
Make sure the device you want to connect to is in pairing mode. Your phone ( ) is currently visible to nearby devices.
Paired devices
Buds2
Available devices


11:00
45%
Buds2
Left
Right
91%
Calls
Audio
Auto switch to other devices
Automatically connect to other phones and tablets signed in to your Samsung account when a call begins or media starts playing.
Find a broadcast
Listen to Auracast broadcasts near you.
Rename
Disconnect
Unpair


10:45
47%
Listen to Auracast broadcasts near you.
Connected to Buds2
FlooGoo_B18E70
The lock icon indicates that a password has been set at the broadcasting side, which may not be necessary for your application.


10:46
47%
FlooGoo_B18E70
Leave
Connected to Buds2
Quit button
Available broadcasts

Specification & Features

- Bluetooth V5.4, Class 1 Bluetooth v5.4, +15dBm BR/LE TX power, -97dBm BR and -100.5dBm BLE 1M sensitivity
- Dual-mode, compatible with Bluetooth Classic HFP/A2DP headsets/speakers and future LE audio hearables
- Qualified design, supporting A2DP, AVRCP, TMAP, PBP (Auracast)
- Optimized with Qualcomm® Snapdragon® Sound for robust connectivity and ultra-low latency
- Supports aptX™, aptX HD, aptX Adaptive, and aptX Adaptive Lossless audio codecs
- USB-A connector with composite device capabilities, including HID and virtual COM port, allowing audio playback and voice call control from Bluetooth headsets and earbuds
- Firmware upgrade via USB for easy updates
- LE Audio Gaming mode with Voice back Channel for ultra-low latency (25.5ms)
- LE Audio Unicast Music with media control (MCP)
- LE Audio Unicast Voice with call control (CCP)
- LE Broadcast source supports Telephony and Media Audio Profile (TMAP) and Public Broadcast Profile (PBP)
- Volume control using VCP (Virtual COM Port)
- Microsoft Teams compatibility
- CE/FCC/RCM
- Contains FCC ID 2A22WFMB120
- USB-A plug, 5V 100mA
- Operational Temperature: -40°C to +70°C
- Dimensions: 38.6mm x 19.5mm x 6.8mm
- Item weight: 3.8g
- Package weight: 6.8g
- Package size: 10cm x 6.2cm x 0.8 cm

Troubleshooting Q&A and Support

Q: The LED doesn't flash or light up when I insert it into a USB port.

A: FlooGoo FMA120 can be inserted into a USB-A socket from both sides, but it only works when the correct side is used. Check if the golden connectors on FMA120's USB connector are contacting the receptors of the USB port when inserted.

Q: How can I improve the working range with my headset/earbuds?

A: You may try using a USB extension cable to relocate FMA120 to a higher and better position.

Q: Can I use the dongle with Raspberry Pi, smart TV and projector?

A: FMA120 functions as a standard USB audio device. With the latest version of Raspbian, it is detected automatically. You can use command "aplay -l" to verify if it has been recognized successfully. For Android-based smart TV or projectors, please activate the developer mode and ensure that "Disable USB audio routing" is not enabled.

Q: Do I need to keep the desktop app running to use the dongle?

A: No, you don't need to keep the desktop app running to use the dongle. The dongle retains its settings, allowing you to set it up on one host and use it on another.

Q: How do I enable the aptX codec, including aptX HD and Adaptive, when using a compatible headset?

A: The dongle will automatically select the best codec when connecting to a compatible headset, you can confirm the chosen codec in the "Codec in Use" panel in the desktop app.

Q: How do I enable the aptX Adaptive Lossless codec when using a compatible headset?

A: It will be enabled automatically when connected with a compatible headset. Please also confirm if the sample rate is 44100Hz or 48000Hz in the "Default Format" in the Windows sound device properties. You can find this setting by

navigating to “Settings->Sound->Device properties->Additional device properties->Advanced”. If the sample rate is set to 96000Hz, aptX Adaptive will be used instead.

Q: aptX Lossless is still not enabled after checking all the settings on the Windows/host PC.

A: Please disable "Spatio Audio" and "Multipoint" in the headset's app if lossless mode cannot be enabled.

Q: I already have a standard Bluetooth adapter, will FMA120 conflict with it?

A: No, the FMA120 runs all its functions, including the Bluetooth stack, within the embedded high-performance processors inside. It doesn’t require additional drivers on the host, so it won't conflict with other Bluetooth adapters.

Q: Do I need to reset the dongle to apply a new setting?

A: Depending on the firmware, switching between high-quality and gaming modes usually takes effect immediately. However, for other settings changes, such as parameters for broadcast, a reset is recommended.

Q: Where can I find the latest firmware for the dongle?

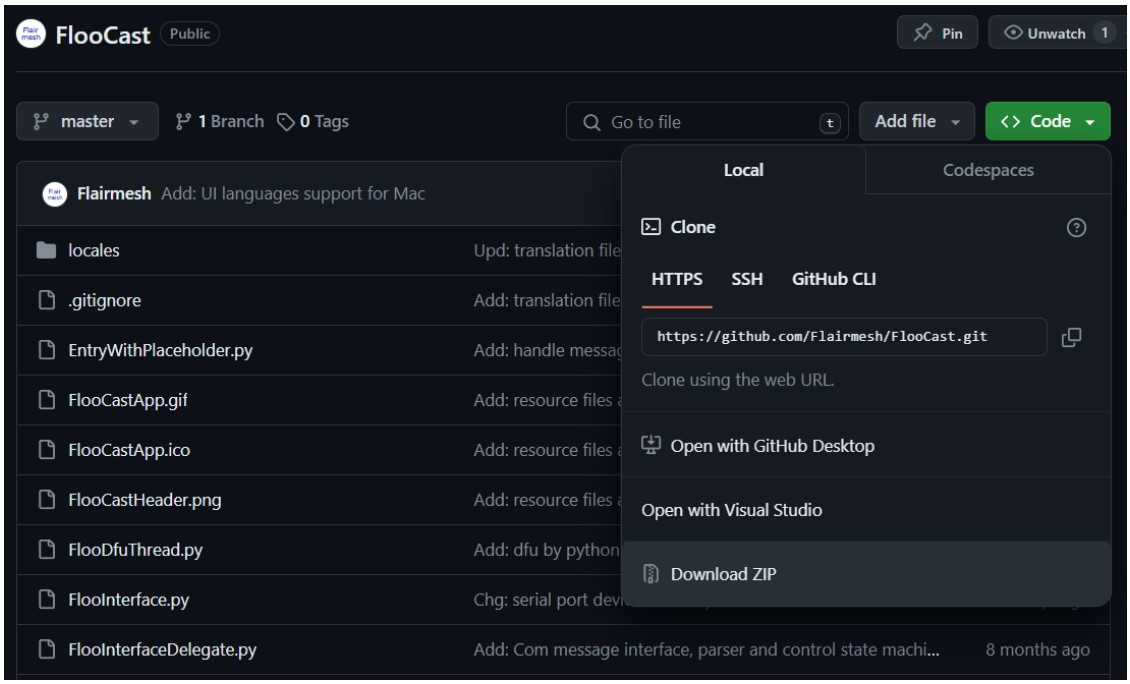
A: You can find the latest firmware through the Support Link, which is also accessible from the desktop app.

Q: What if I encounter other issues?

A: You can contact us via email at support@flairmesh.com.

Installation Instructions for FlooCast (Mac and Linux Users)

1. If you are familiar with Git and Github, you can use the following command to download the source codes of the app:
   # git clone https://github.com/Flairmesh/FlooCast.git
2. Alternatively, you can click “Download ZIP” to get a copy of the source codes. The button can be accessed in the drop-down menu under “<> Code”, shown as the green button in the following picture.



3. Install Python if you haven’t already. The latest version can be downloaded from here.
4. Open a Terminal (on Mac, you can use Spotlight to search for “Terminal”) window, and enter the following commands to install two required modules:
   # python3 -m pip install pystray
   # python3 -m pip install pyserial
5. In the Terminal window, change the current directory to where the FlooCast app is downloaded (on Mac, it might be downloaded to the User’s Download folder), then run the application:
   # cd Downloads/FlooCast-master
   # python3 main.py

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