LilyGo T halow version 1* setup + example

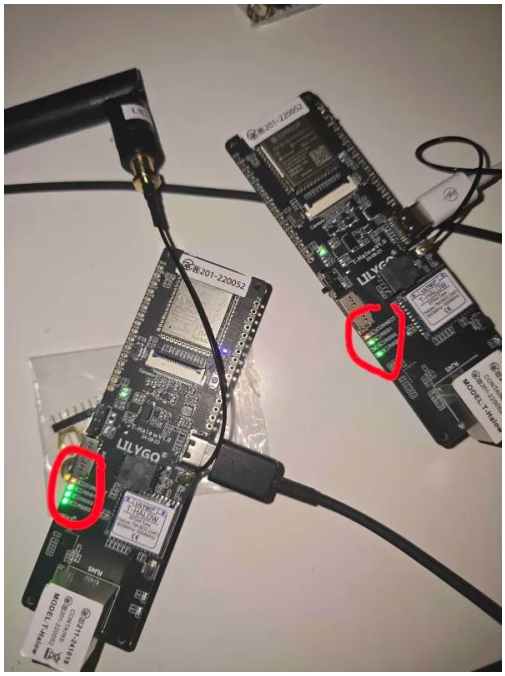
Official Github: https://github.com/Xinyuan-LilyGO/T-Halow/tree/master

Updated July 2025

How to setup the boards

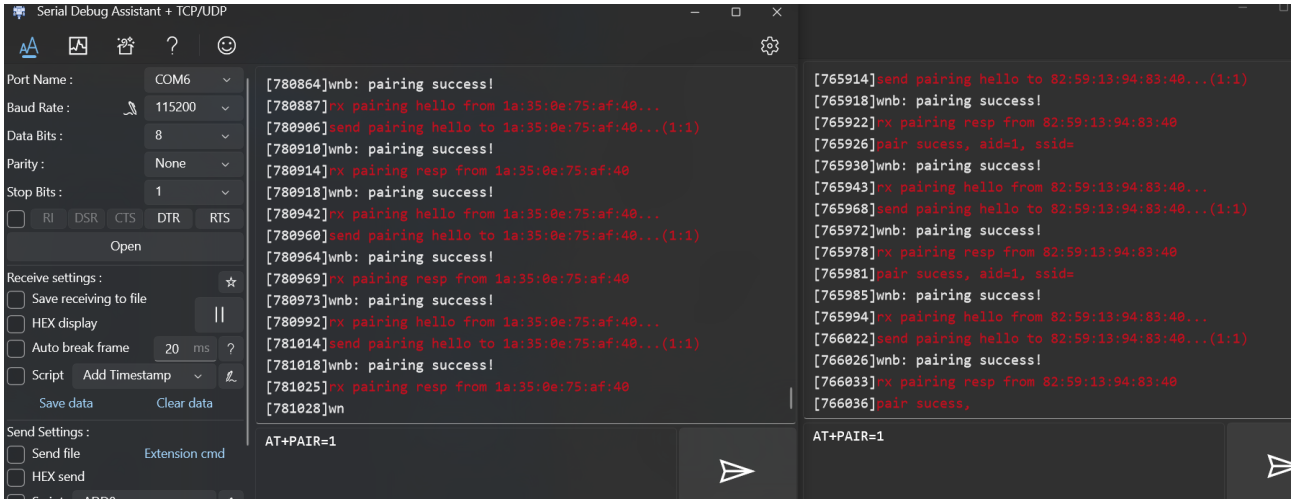
1. Switch to the desired mode, one of them as AP, the rest as STA, supports up to 8 STAs
2. Connect the antennas to the boards before powering it up.

3. Power on the boards through USB-C
4. Hold the pair button until the 4 indicator LEDs are on after releasing the button or go into serial monitor and type in “AT+PAIR=1” until both boards pair up, then stop the pairing “AT+PAIR=0”.



The boards will automatically connect to each other whenever both of them are powered on again, to disconnect them use “AT+LOADDEF=1” to reset the halow boards. To unpair a specific STA or

unpair without resetting the board, use “AT+UNPAIR=MAC_Address”, you can find the mac address by doing “**AT+MAC_ADDR=?”** on the board you want to disconnect.



Seen on the image, once they are connected through AT+PAIR=1, they confirm by saying “wnb: pairing success!”

To check later on if they are connected through serial use the command “AT+CONN_STATE”.

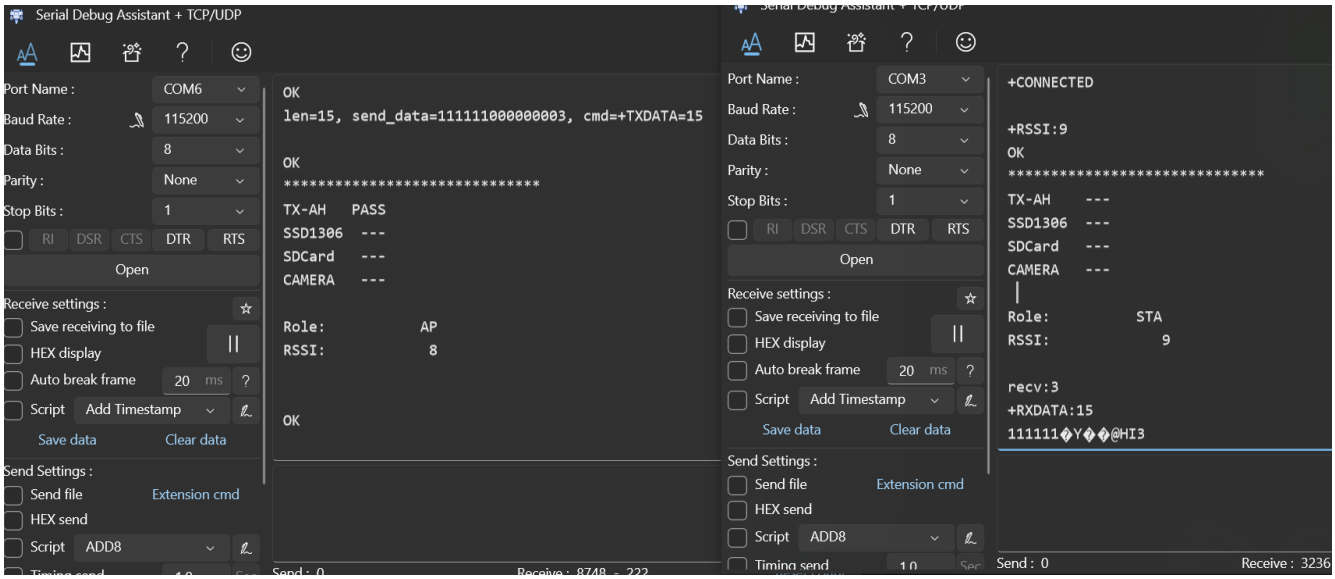
ESP-controlled mode

PlatformIO is recommended, since the example is for that.

1. Install Visual studio code and python, and clone or download the project from: https://github.com/Xinyuan-LilyGO/T-Halow/tree/master and Thalowtestbed from: https://github.com/Simssek210/T-halowtest
2. Place the examples from Thalowtestbed inside the example folder of T-HaLow-master
3. Install PlatformIO plugin and restart VScode after installation
4. Open up the T-halow project and give it some time to install the required packages
5. After installed, put these two lines inside the platformIO.ini “; src_dir = examples/AP_TXAH
6. ; src_dir = examples/STA_TXAH” under the other examples and this line “monitor_speed = 115200” right under upload_speed.

To flash, unplug both boards and hold down the BOOT button on the AP board while plugging it back in, the blue LED should stay on indicating its in download mode. Uncomment “TX_AH_Rx00p_AP” press on the arrow to install it , once flashed, do the same with the STA board but now uncomment “TX_AH_Rx00p_STA”. Once both are flashed you should now be able to see something like this

The program used here is called Serial Debug Assistant, can be installed from the Microsoft store or use Serialportassisant https://kanglin.github.io/SerialPortAssistant/ , essentially the same program.



If you want to send your own messages, configure the AP_TXAH and STA_TXAH with the right parameters (dst, src mac address, “AT+MAC_ADDR=?”) and change the payload to what you desire.

Host driven (Ethernet bridge)

It requires two PCs or machines and two ethernet cables.

Pair up the board like before, if done already skip this.

Assign an address to each T-Halow board, for example “10.10.10.156” for AP and “10.10.10.123” for STA,

to do that open up Control panel -> Network and internet -> Network sharing Center and then press on the ethernets. Go into properties -> TCP/IPv4 and change it to static ip address, the subnet should be 255.0.0.0 for both.

Once done turn off Firewall and the internet on both machines/PCs, open up cmd on both machines and ping the boards. You should be able to see them pinging each other

Image from LilyGO's github repo, I never got it working.

If the board doesn't ping, check if its running the right firmware by doing "AT+VERSION=?" it has to return "v16.4.3.xxxxx". If it returns anything else, you have to flash the right firmware using a programmer or email LilyGO's after-sale service and ask for a replacement.