

Banana Pi D1 Camera Quick Start Guide

1.How to record a video

In a fully charged or connecting micro - power USB cable, BPI-D1 will automatically start the default set of video application. Start recording the video and sound and generate file storage to TF card. Recorded 30 minutes to automatically generate and save for a video file. Click the "function key " button, then manually stop recording the current task and generate a complete video file, start the next record files after 10 seconds.

[Reminder]: Micro-USB interface supports USB flash disk connected through USB female port of OTG cable, when there is no TF card, support recording videos directly to the external USB drive.

2.How to connect to the AP Connect to the specified AP

The USB-WiFi module is connected to the USB interface of OTG. Press the BPI-D1 "primary key" button, green LED will keep long bright after flashing about 8 seconds; it means BPI-D1 work in AP mode.

- 1)Connect any mobile devices (e.g. Smartphone, tablet or computer) to the WiFi connection "SSID=XXX_D1_A39XXX" and enter the default password "12345678".
- 2)In Internet Explorer, enter the FTP address "ftp://192.168.0.1". (user name: admin, password: admin)
- 3)Click "Ethernet", select one of the available WiFi. The SSID parameter will be displayed in the above, click password blank and enter the known password, then click the "save". After flashing on the screen, four parameters in the form disappeared that the connection is successful.
- 4)Click on the (39) Boot/WPS button, BPI-D1 switches to slave mode; you will see LED flashes from fast into slow, which has been connected to the specified WiFi-AP.

The screenshot shows the 'Wireless Network' configuration page. The sidebar menu on the left has 'Wireless' selected. The main area contains the following configuration fields:

- Wireless Network SSID: wise
- Wireless Network Mode: Infra
- Security: WPA/WPA2 PSK
- Password: [Empty field]

Buttons for 'Search', 'Add', and 'Save' are visible. Below the configuration fields is a table of available wireless networks:

No.	Wireless Network SSID	Wireless Network Mode	Security	Connection status	Signal
1	IUGH	Infra	WPA/WPA2 PSK	Unconnected	middle
2	davy	Infra	WPA/WPA2 PSK	Unconnected	middle
3	wise	Infra	WPA/WPA2 PSK	Unconnected	strong
4	anfangtest001	Infra	WPA/WPA2 PSK	Unconnected	middle
5	84-5B09	Infra	NONE	Unconnected	middle
6	test	Infra	WPA/WPA2 PSK	Unconnected	middle
7	87-4X07	Infra	NONE	Unconnected	middle

3. View Real-time Video

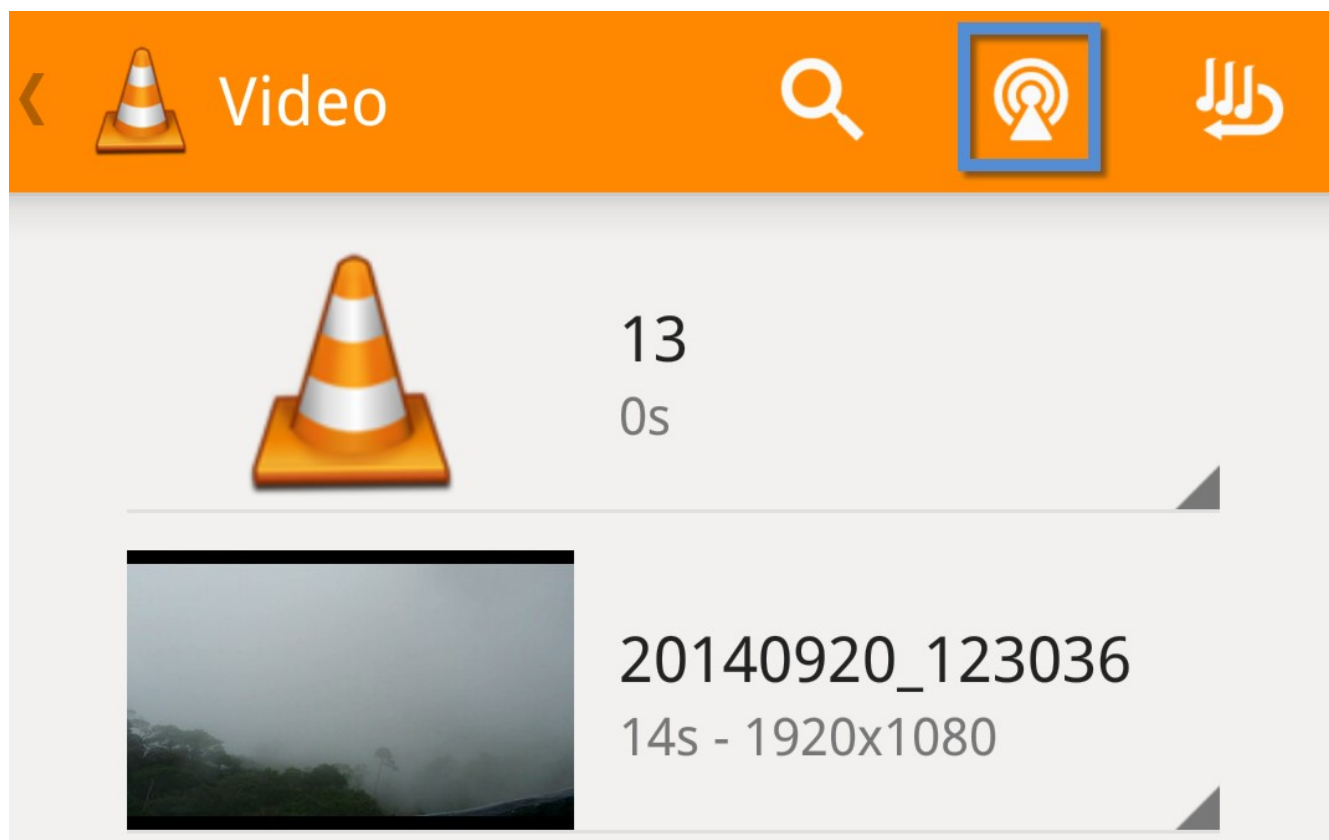

View in range of LAN

At present, viewing real-time video can be achieved in the LAN through VLC player or MX Player. If the two players installed on your PCs or mobile devices, it could be view via network stream. To do this:

【Notes】: Just take the case of VLC player

1) Install VLC player on your PCs or mobile devices.

2) Connect any mobile devices (e.g. Smartphone, tablet or computer) to the WiFi connection “SSID=XXX_D1_A39XXX” and enter the default password “12345678”.

3) Open VLC player and click “The image shows the VLC mobile application interface. At the top is an orange header bar with a back arrow, a VLC cone icon, the word "Video", a search icon, a WiFi icon (highlighted with a blue square), and a playlist icon. Below the header, there is a large VLC cone icon on the left and the number "13" above "0s" on the right. Underneath, a video player shows a landscape scene with trees and a building. To the right of the video player, the text "20140920_123036" and "14s - 1920x1080" is displayed.

4) Enter the AP of BPI-D1“rtsp://192.168.0.1”, click “open(打开)” and view the real-time video



[Reminder]: Real-time video may be delay, which related to the network transmission.

4.How to view files

Option ① : Remove the SD card from the board and insert it into the SD card reader of a computer.

Option ② : Battery mode, using micro-USB data cable to connect the D1S and PC. PC client can access the contents of TF card through the data cable, while charging the lithium battery.

[Reminder]: Micro-USB interface supports USB flash disk connected through USB female port of OTG cable, Support directly copy files from the TF card to the external usb drive.

Option ③ : Connect PC or mobile devices to the SSID access point named“BPI_D1_XXYYZZ”, and access files at the FTP address ftp://192.168.0.1.

[Reminder]: Support IE, Chrome, Opera, Safari or Firefox browser login FTP to view or download. If you need play the video you will need to install player support for H.264 or MJPEG decoding format.

5.How to set

Record Parameters Settings

When D1S power is ON, video recording will start automatically according to the default set. If you want to set the D1S video parameters, you can refer to the following steps:

1.Switch on the WiFi and switch to the AP mode (The LED light will remain steady) . Connect any mobile devices (e.g. smartphone, tablet or computer) to the WiFi, connection “SSID=BPI_D1_XXYYZZ” and enter the FTP address “ftp://192.168.0.1”.

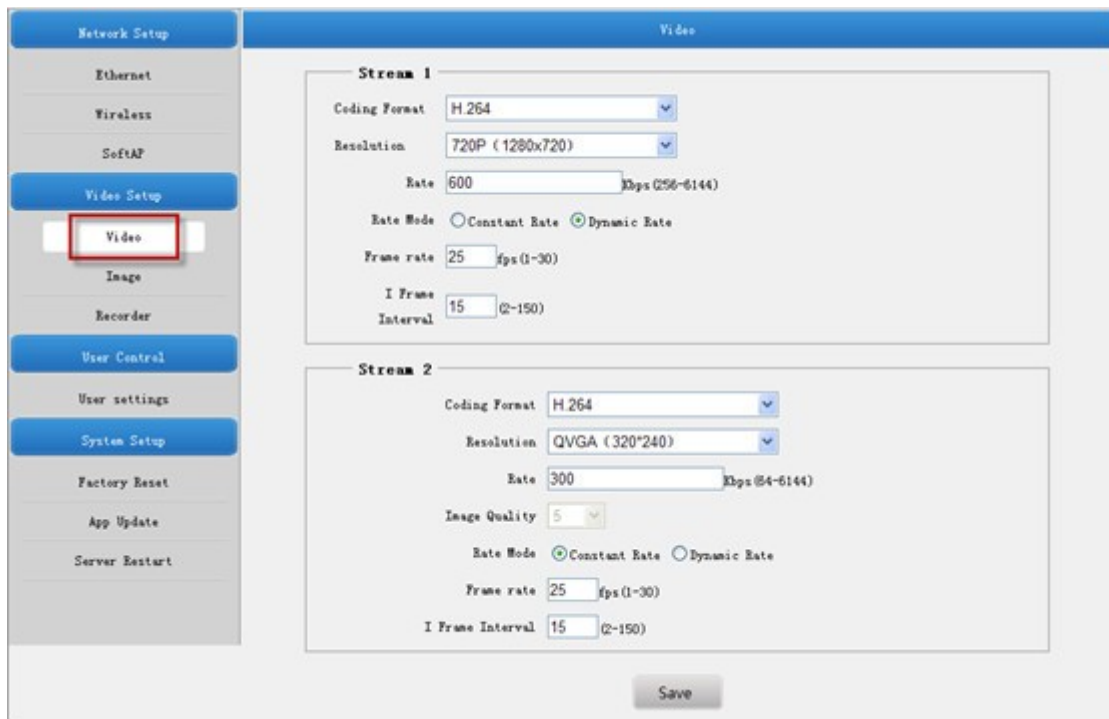
[Reminder]: User Name: admin; Password: admin

2.Click the "Video Settings" or "Record Settings" can adjust the record parameters.

[Reminder]: After saving the changed settings , all setup are validated only after manually re-open after switching off the device.

Video Settings

"Video" related to the format of the final recorded and resolution, devices support the two coding formats which are H.264 and MJPEG; relevant parameters can be set manually according to the required. After setting , click "Save".



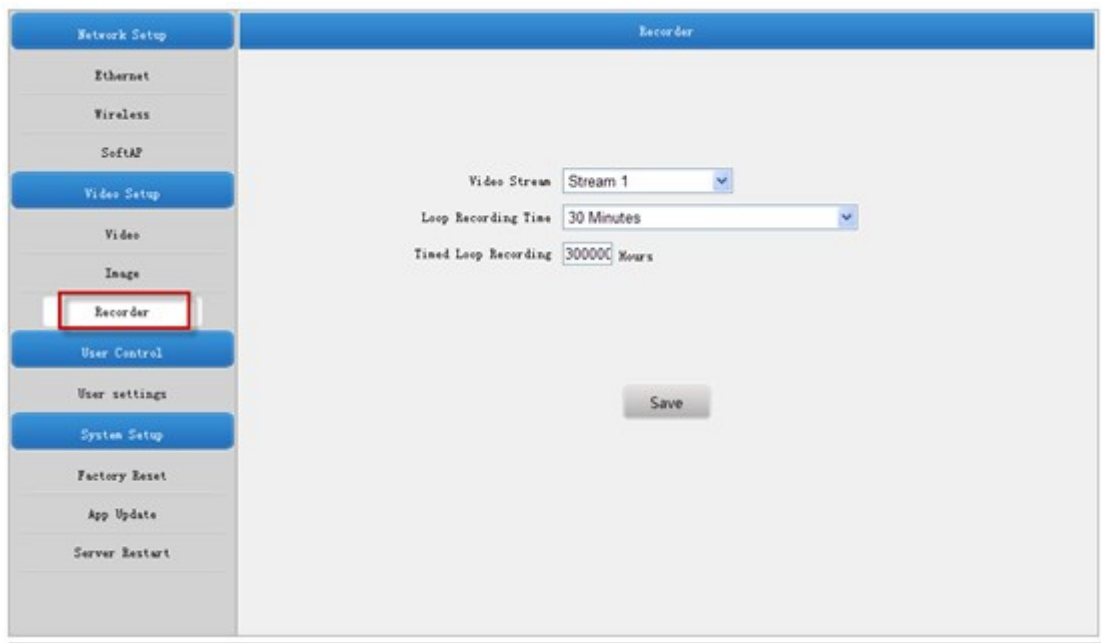
Record Settings

“Record” related to recording save time, the number of video files and the size of video files, devices support the two coding formats, setting Loop Recording Time and Timed Loop Recording; relevant parameters can be set manually according to the required. After setting , click "Save".

Video Stream: Choose the two streams in the “Video” which are H.264 and MJPEG.

Loop Recording Time: Finish a video and save a file according to setting recording time.

Timed Loop Recording: Start recording according to Loop Recording Time setting after switch on the device , beyond the setting time automatically stop recording.



Reminder]: Video resolution depends on choosing a different video stream, and the generated video file size will be different.

Relevant Information

WiFi LED at work

D1S "function key" button, click open WiFi AP mode, and then click close. "Green LED" will flash for about 8 seconds:

LED Status	Description
Light	WiFi work in AP mode, you can search the AP SSID. (for example, XXX_D1_A39XXX)
Flash	WiFi work in slave mode, it will automatically connect the AP that set the parameters before.

WiFi ON/OFF Energy Consumption

WiFi ON/OFF to save the power consumption, the two statuses generally as follows:

- 1.WiFi OFF, BPI-D1 is recording and saved to TF card, current 5V power is about 250mA.
- 2.WiFi ON, BPI-D1 is recording and saved to TF card, at the same time D1S connected to the network through WiFi , current 5V power is about 350mA.
- 3.It can be used to predict 500mah lithium batteries can maintain BPI-D1 work 1 to 2 hours.

Program the Firmware

Important Notes before You Start:

- 1.You must use the compatible version of the firmware programing software with source codes.
- 2.The software works on Windows XP Service Pack 3 and newer versions.
- 3.The software file path is located at: /lamobo.dev/tool/burntool in the code directory
- 4.Before programing the firmware, please make sure to copy and paste the 3 compiled files “zImage,” “root.sqsh4,” and “root.jffs2” to the root directory.

(Note: The complied files are saved at: /lamobo.dev/output)

How to Program the Firmware

- 1.Battery mode, press and hold the "primary key" 5 seconds off BPI-D1 power. Before the PC inserts BPI-D1 micro - USB programming cable, double-click firm programming tools icon, runs the burn tool. Holding down the "function key" and the micro - USB programming cable connecting to the PC, the module enters the programming mode. At this time BPI-D1 LED no instructions. If there is no lithium battery, you do not need to connect the micro USB power cable.



2. After the PC inserts BPI-D1 micro - USB programming cable, the firm programming tools will detect the launch of the application. Once connected, a yellow status bar will appear next to the device in the window, and the status will show “Ready” (please recheck and repeat the steps above if no response). Press the “Start” button on the top to start the firm programming automatically.

Status	Number	Progress	Status	Timer	serial NO
Yellow	Device0	0%	Ready	0:00:00	
Grey	Device1	0%		0:00:00	
Grey	Device2	0%		0:00:00	
Grey	Device3	0%		0:00:00	






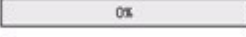


3. Burning completed, micro-USB data cable disconnected with PC.

Status Descriptions

The status, progress and elapsed time will appear in the programing window.


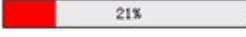

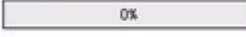

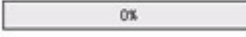

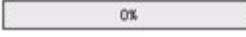
[Successful]

Once the status and progress bar turn green, the progress bar reaches 100%, and the status reads “Completed,” the firmware has been programmed successfully.

Status	Number	Progress	Status	Timer	serial NO
	Device0	 100%	Burn task complete	0:02:44	AAB3CCYID000001
	Device1	 0%		0:00:00	
	Device2	 0%		0:00:00	
	Device3	 0%		0:00:00	

[Unsuccessful]

When the status and progress bar turn red, the status area will display one of several error messages, indicating an unsuccessful programming attempt.


Status	Number	Progress	Status	Timer	serial NO
	Device0	 21%	Fail to connet usb after download produce	0:00:38	
	Device1	 0%		0:00:00	
	Device2	 0%		0:00:00	
	Device3	 0%		0:00:00	

If the operation is unsuccessful, please retry after adjusting the following settings:

1. Click Settings, select “Researcher” as the User Name, leave the Password blank, and then select “OK”.

✕

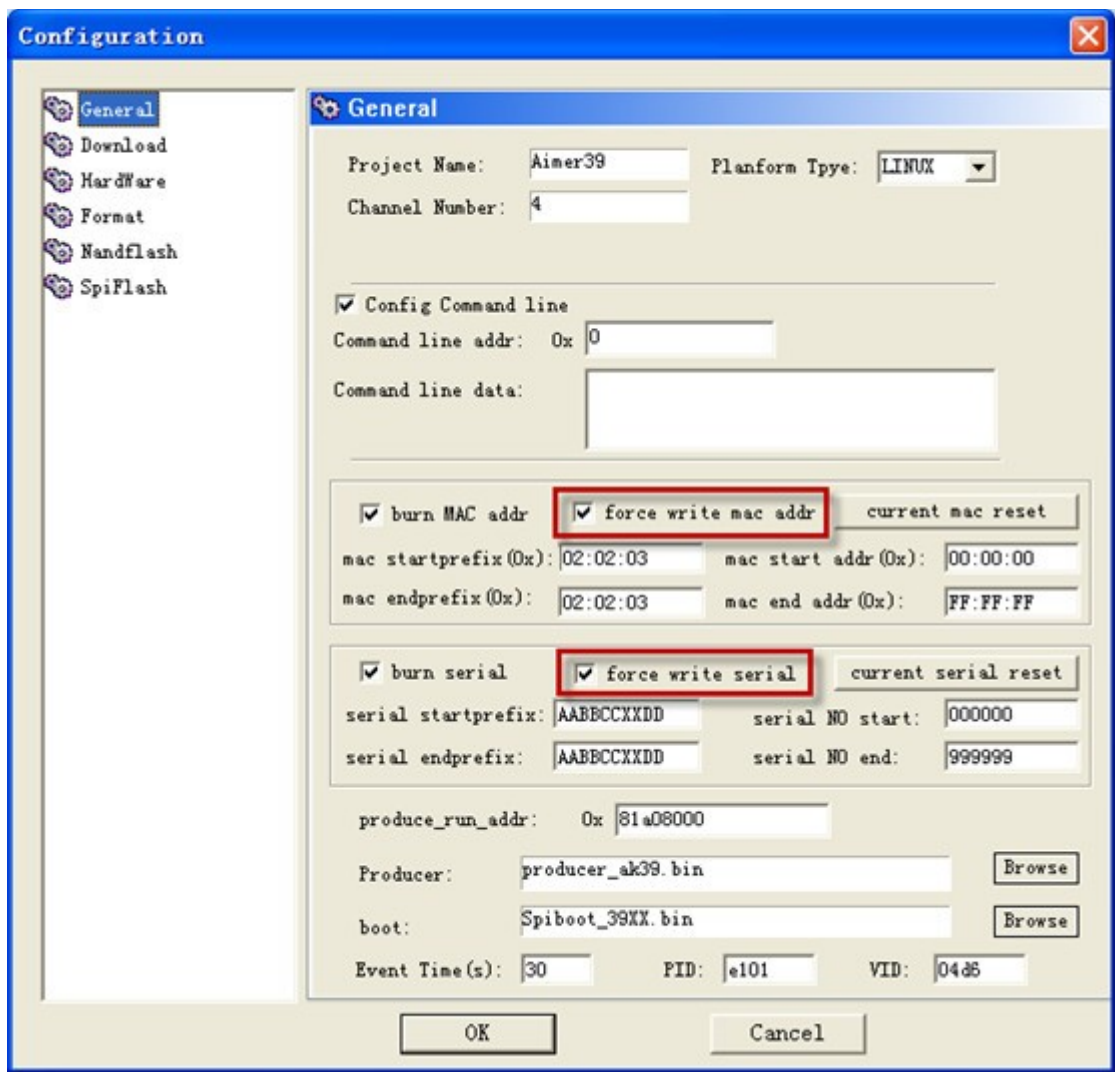
Input the User Name and Password:

 User Name:

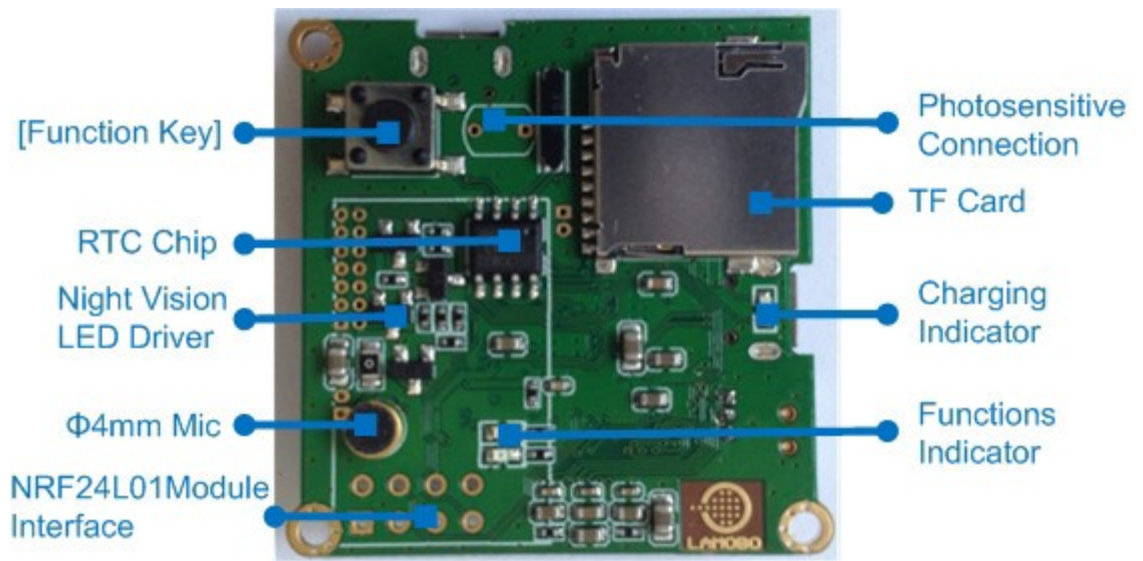
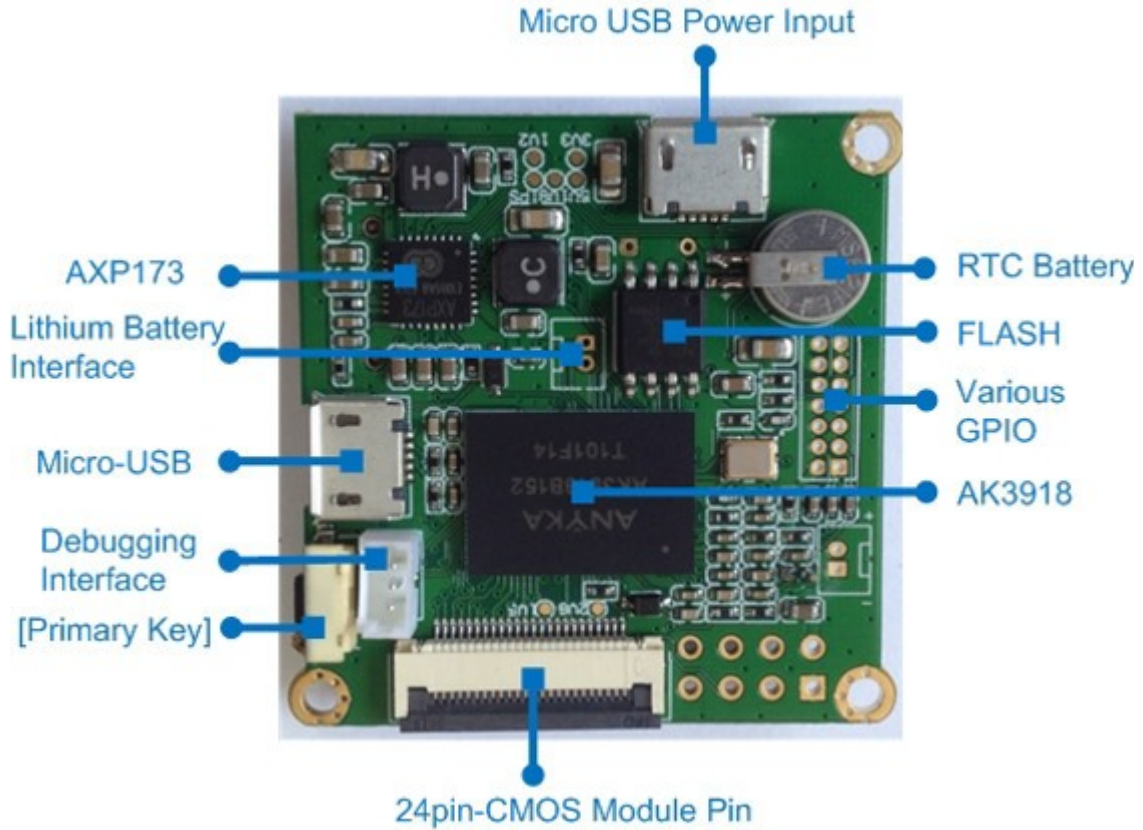
Password:

1. Choose “General” on the left-side menu and check the two boxes “force write to the mac address” and “force write serial number,” and then select “OK.”

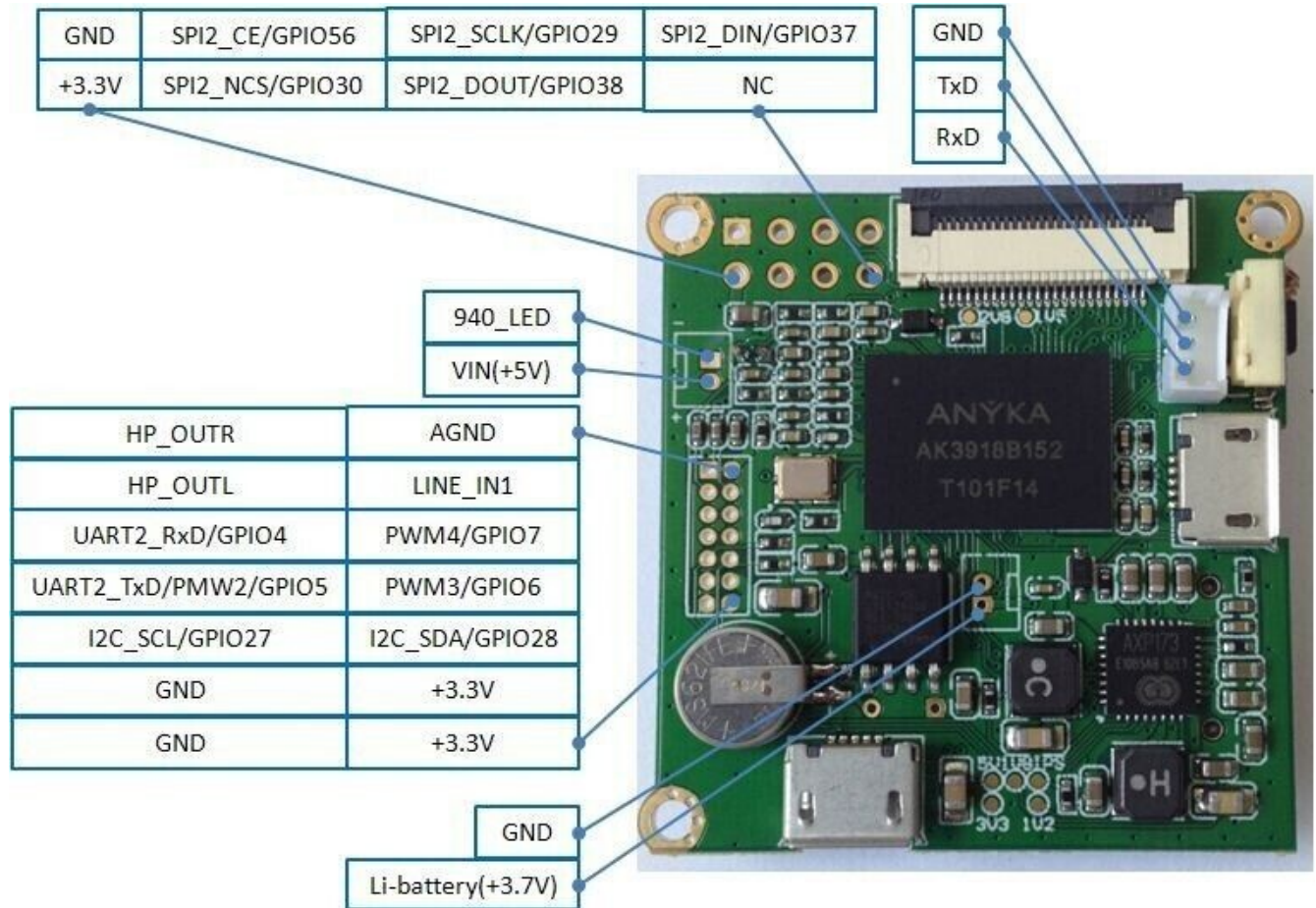
2. Repeat steps 1-3 in the “How to Program the Firmware” and try again.



Interface connections:

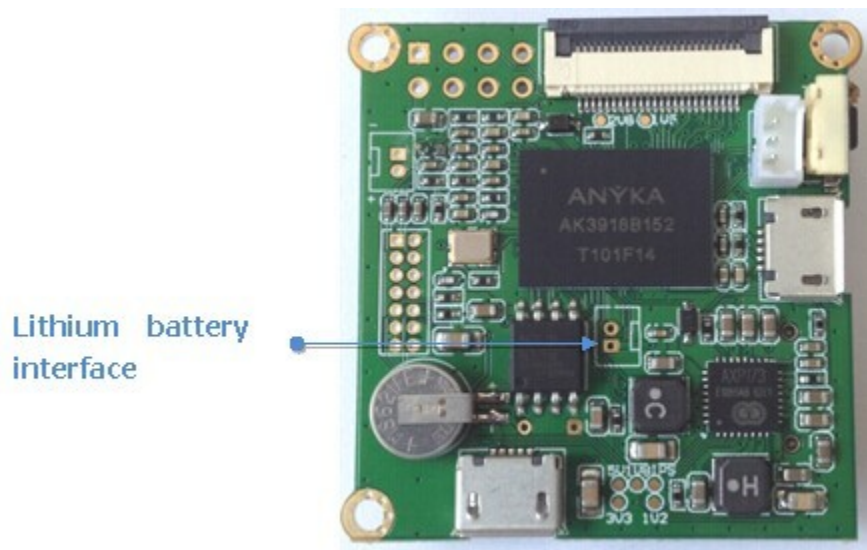


GPIO Pin Definitions:



Power Supply

Battery mode: Built-in lithium battery power supply



External power supply mode: DC-micro-USB power cable at the same time for charging the D1S built-in lithium battery.

