01 User manual

Developer Manual

Revision record

Version	Date	Content
V1.0	2024-10-14	First edition

1. Description of the Hardware Interface

Expansion interface on the top of the machine is mainly recommended for professional developers, common users are recommended to use bluetooth remote controller or phone app to control the device, and the app can be downloaded from the WEILAN website.

Micro USB port: Firmware download use or develeper debug use

USB Port: For connecting external storage devices or providing 5V voltage output

Network Port: Connecting external devices for data transmission.

12V Power Output: Used to provide 12V power for external devices with DC interface

2. Firmware burning

2.1 Hardware connection

Connect the Micro USB port on the interface panel with a Micro-USB cable.

2.2 Download and install the drivers and software required for burning

A. AW_Driver: Driver for burning equipment (ALLWINNER)

Steps to install the driver:

- First, in Device Manager, select View - > Show Hidden Devices.
- After the device is connected to the computer with micro USB cable, an unknown device will be shown in the "Device Management", right-click, view Properties - > Details, and confirm the path of the device instance as VID1F3A & PID_EFE8;
- Click Updateing Driver button - > Update Driver.
- Select the path where the **AW_Driver** is installed.

B. adb-fastboot: can be used for adb debug with micro usb cable

> The complete toolkit including adb and fastboot can also be downloaded from the Android SDK Platform-Tools .
>
> In order to directly execute adb commands, it is necessary to set up windows environment variables in advance.

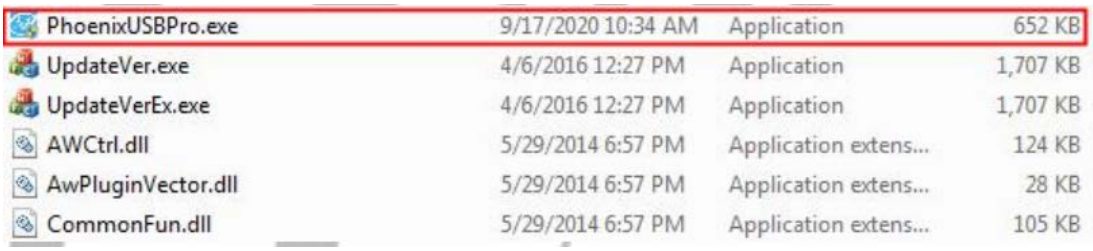
When device boot up, you can run the adb shell to connect to the board in the Windows cmd or PowerShell command line:

```
PS C:\Users\PC1> adb devices
List of devices attached
0402101560      device

PS C:\Users\PC1> adb shell
root@sport:/# cat /etc/currversion
202404241038_dailybuild_sport_TMP_V1.5.5
```

C. PhoenixUSBPro_V4 Tools (ALLWINNER)

PhoenixUSBPro.exe is a tool for updating device images via USB



2.3 **Upgrade operation**

Double-click to launch PhoenixUSBPro.

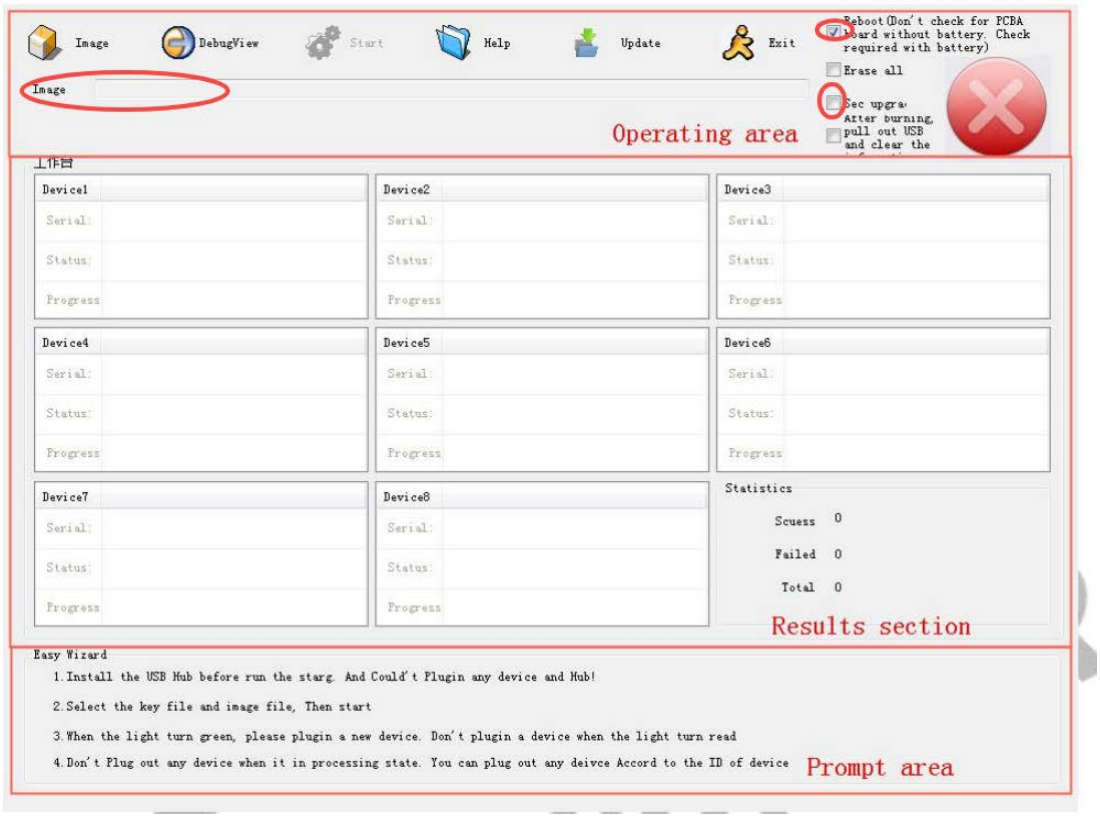
A. Check the first and third items on the right side (Reboot, Sec upgrade), do not click "erase all " to avoid erasing configuration information.

B. Select the firmware package file and click the start button.

C. Manually control the machine to restart (long press the power button, or execute the reboot efex command after logging in through the adb shell).

D. Observe the status and progress. If there is no response, repeat steps b- > c.

E. After successful burning, click the "Stop" button or directly close the PhoenixUSBPro tool. Otherwise, if the USB cable is still connected, the dog will restart and burn again.



3. User account

Common account

Username: dev

Password: 12345678

4. Log in to the device via WIFI

SSID: BabyAlpha_xx_xx_xx (where xx is two hexadecimal characters, replace according to the actual data)

Password: 12345678

In the command line tool, enter

```
Plain Text
ssh dev@10.10.10.10
```

Then enter the login password to log in to the robot dog.

5. Log in to the device via serial port (not yet available).

Connect the serial port cable to the Main board. Be sure to turn off the flow control before operating, otherwise the keyboard input will not respond.

Start minicom:

sudo minicom -D /dev/ttyUSB0 -b 115200

Enter the Minicom configuration menu:

- When minicom is running, press Ctrl + A , then press O to enter the settings menu;
- Select "Serial port setup" and press Enter.
- In the "Serial port setup" menu, find "Hardware Flow Control" and set it to "No" by left and right keys.
- For software flow control, find "Software Flow Control" and set it to "No" as well.

6. Log in to the device via adb

Specific operations can refer to **1.2.b.adb-fastboot** of the **manual**

7. Local OTA upgrade

```
C
#1.upload 20241015_A120_DEV_sport_swu_V1.1.0.tar.gz  to /mnt/UDISK

#2.excute swup.sh to upgrade

root@sport:/mnt/UDISK# swup.sh
20240924_A120_DEV_sport_swu_V1.1.0.tar.gz
File: 20241015_A120_DEV_sport_swu_V1.1.0.tar.gz
Old Versoin: 1.0.7
New Version: 1.1.0
fw_setenv swu_oldver 1.0.7
fw_setenv swu_updatever 1.1.0
cd /mnt/UDISK
mkdir -p /mnt/UDISK/swupdate_files
tar vxzf 20241015_A120_DEV_sport_swu_V1.1.0.tar.gz -C
swupdate_files
rootfs.img
xxh64sum_rootfs.check
tina-r818-evb1.swu
xxh64sum_swu.check
tar:done
swupdate_cmd.sh -i /mnt/UDISK/swupdate_files/tina-r818-evb1.swu -e
stable,upgrade_recovery
config new swupdate
swu_input: ##-i /mnt/UDISK/swupdate_files/tina-r818-evb1.swu -e
stable,upgrade_recovery##
## set swupdate_param done ##
call check_swu()
check swu xxh64sum...
tina-r818-evb1.swu: OK
/mnt/UDISK
call check_rootfs()
check rootfs xxh64sum...
rootfs.img: OK
/mnt/UDISK
call swupdate_cmd()
swu_param: ##-i /mnt/UDISK/swupdate_files/tina-r818-evb1.swu##
swu_software: ##stable##
```

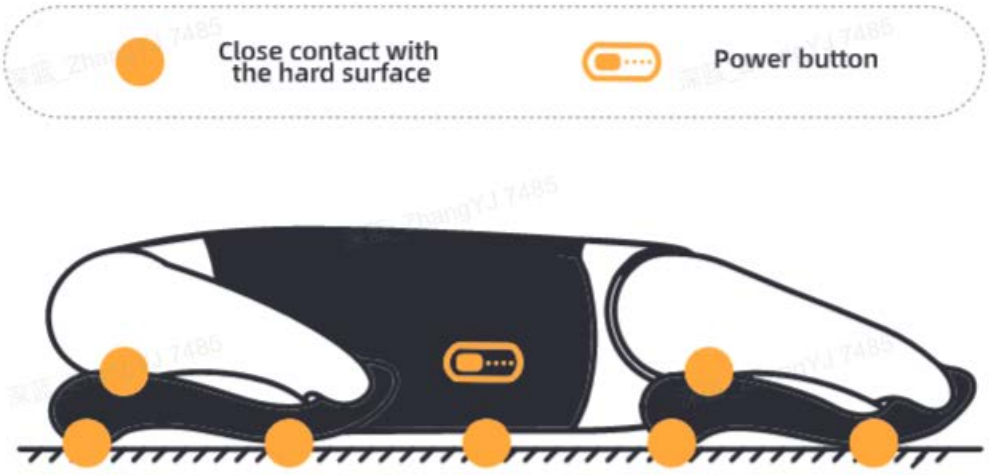
```
swu_mode: ##upgrade_recovery##
swu_next: ####
recovery_status: ####
swu_verstatus: ####
swu_updatever: ##1.1.0##
swu_oldver: ##1.0.7##
###now do swupdate###
###log in /mnt/UDISK/swupdate_files/swupdate.log###
## swupdate -v  -i /mnt/UDISK/swupdate_files/tina-r818-evb1.swu -e
stable,upgrade_recovery ##
swu_next: ##reboot##
Rebooting.
```

After the upgrade is successful, the system will automatically restart.

8. FAQs

8.1 After the remote-controlled robot dog stands, its legs have an abnormal posture and cannot control walking

Before starting up, the legs of the robot dog need to be placed correctly according to the picture.



8.2 No response to adb command

After about 5 minutes of booting up, the adb service on the machine dog will be automatically turned off to avoid affecting system performance.

9. FCC Compliance Notice

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.