Chipsee

Industrial PC

Raspberry Pi OS OS on AIO CM4 User Manual

For AIO CM4 Products

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AIO-CM4-156 Raspberry Pi OS Start Guide

Setting up your AIO-CM4-156

This manual provides users with a quick start guide of Chipsee Raspberry Pi Computer (Abbreviated as RPC) after you have reflashed the latest Raspberry official released OS. Through this manual, users can quickly set up their AIO-CM4-156 to run Raspberry Official latest released OS.

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What you will need

- SD Card
  - We recommend a minimum of 16GB micro SD card, and using Raspberry Pi Imager to install an operating system onto it.
- Power supply
  - We recommend 12V 2A.

> **Warning**
>
> This device only supports 12V Power Supply.

Installing the Operating System

You can reference Installing operating system images to know how to install the Operating System on your SD card.

Start up your AIO-CM4-156

1. Insert the SD card to SD Slot of AIO-CM4-156.
2. Power On.

Install CMhelper

1. Add the following lines in your **/boot/config.txt** file:

```
disable_overscan=1
dtparam=i2c_vc=on
dtoverlay=i2c-rtc,ds1307,i2c_csi_dsi,addr=0x32
```

2. Add cmhelper PPA to your system manually by copying the lines below to your system's software sources **/etc/apt/sources.list.d/cmhelper.list**:

```
deb http://ppa.launchpad.net/chipsee/cmhelper/ubuntu bionic main
deb-src http://ppa.launchpad.net/chipsee/cmhelper/ubuntu bionic main
```

3. Update list of available packages:

```
$ sudo apt update
```

   You will get error "the public key is not available: NO_PUBKEY 06D92B49B9078A87", you should use follow commands to receive key from ubuntu key server:

```
$ sudo apt-key adv --keyserver keyserver.ubuntu.com --recv-keys
06D92B49B9078A87
```

   If the above commands are not usable and you get a warning "apt-key is deprecated. Manage keyring files in trusted.gpg.d instead" run the following commands instead:

```
$ sudo gpg --no-default-keyring --keyring gnupg-ring:/etc/apt/trusted.gpg.d/
cmhelper.gpg --keyserver keyserver.ubuntu.com --recv 06D92B49B9078A87
$ sudo chmod 644 /etc/apt/trusted.gpg.d/cmhelper.gpg
```

   or use the following commands if the above commands don't work:

```
$ sudo gpg --keyserver keyserver.ubuntu.com --recv 06D92B49B9078A87
$ sudo gpg --export --armor 06D92B49B9078A87 | sudo apt-key add -
```

> **Warning**
>
> The key 06D92B49B9078A87 may be different from your error message, you should check your error, and use the right key.

1. Install cmhelper:

```
$ sudo apt update
$ sudo apt install cmhelper
$ sudo reboot
```

> **Warning**
>
> Be sure to reboot after installing cmhelper.

1. Fix volume function.

   If the volume button doesn't work, try to use the following ways to fix it.

   New one file name volen.dts:

```
/dts-v1/;
/plugin/;

/ {
    compatible = "brcm,bcm2835";

    fragment@0 {
        target = <&cam1_reg>;
        __overlay__ {
            status = "disabled";
        };
    };
};
```

   Then compile it to dtbo and copy it to /boot/overlays/:

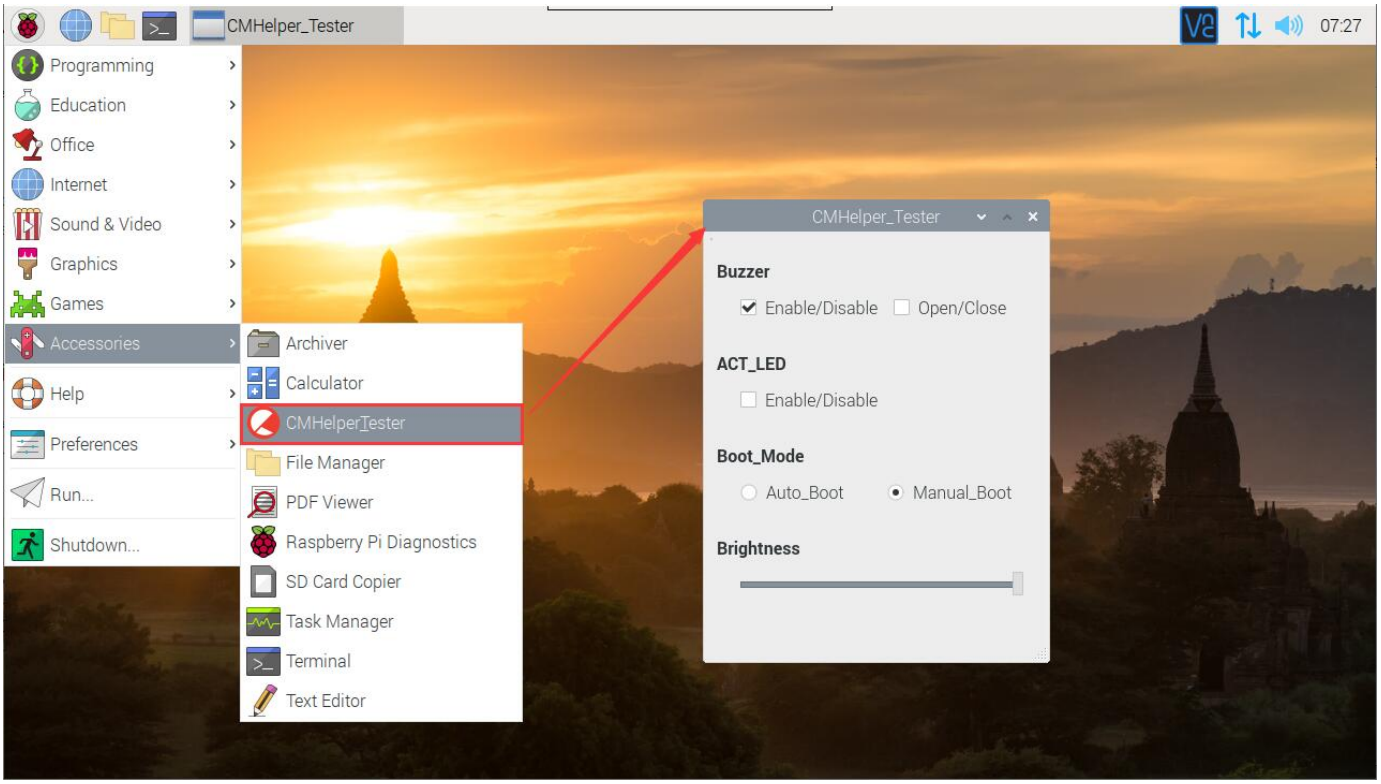
```
$ dtc -I dts -O dtb -o volen.dtbo volen.dts
$ sudo cp volen.dtbo /boot/overlays/
```

   Add follow in /boot/config.txt:

```
dtoverlay=volen
```

reboot to check again.

How to use CMHelper



The CMHelper can help customer use keys and onboard buzzer, led, you can use it to control volume, brightness, power, act led, buzzer.

1. Buzzer can be enabled and disabled, if you enable buzzer function, you can open and close buzzer, otherwise, you can't control the buzzer.
2. The act led is disabled default, if you enable it, you can use it like ACT LED on Raspberry Pi.
3. The product has two boot modes, the default is manual boot, you should press the power key to boot system. If you want to boot system directly after power, you can select auto boot.
4. You can use CMHelper QT application or physical keys to control backlight.
5. This QT Application is open sourced, you can recompile it with the following commands:

```
$ sudo apt update
$ sudo apt install qt5-default
$ git clone https://gitee.com/chipsee/cmhelper_tester.git
$ cd cmhelper_tester
$ qmake cmhelper_tester.pro
$ make
```

6. There is also one C file for you to use:

```
$ cd cmhelper_tester/c
$ gcc -o cmhelper_test -lcmhelper cmhelper_test.c
```

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