



StarFive
赛昉科技

PineTab-V Debian OS Release Notes

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Shanghai StarFive Technology Co., Ltd.

Address: Room 502, Building 2, No. 61 Shengxia Rd., China (Shanghai) Pilot Free Trade Zone,
Shanghai, 201203, China

Website: www.starfivetech.com

Email: sales@starfivetech.com (sales)
support@starfivetech.com (support)

1 About This Manual

Introduction

This document provides release information of PineTab-V Debian OS.

Revision History

Version	Released	Change Description
V1.0.0	2025-01-07	PineTab-V Debian OS v1.0.0 release

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2 Overview

This document contains important information about the PineTab-V Debian OS, supported features, known issues and limitations in this release.

Supported Devices:

- PineTab-V – 8GB RAM and 128GB eMMC storage

2.1 Release contents

This release consists of the following:

Table 2-1 Pre-build Image & Binaries

File	Description
pinetabv-image-debian-pinetabv-1.0.0.img.bz2	Kernel and roofs compressed image file
visionfive2_fw_payload.img	OpenSBI binaries with u-boot as payload
u-boot-spl.bin.normal.out	SPL binary

Table 2-2 Table 1-2 Source Code with tags

Deliverable	Version	Source	Tags
SDK	V5.13.1	files	pinetab-v1.0.0
Linux Kernel	6.6.20		
OpenSBI	v1.2		
u-boot	2021.10		
Debian	Debian GNU/Linux bookworm/sid		
Gnome	43.1		

3 What's New

This section describes the features

3.1 Features

Chassis:

- Dimensions: 242mm x 161mm x 9mm
- Weight: 520 grams (without keyboard), 990 grams (includes keyboard)
- Build: Metal and Plastic
- Color: Matte Black

Display:

- Type: HD IPS capacitive touchscreen, 16.7M colors
- Size: 10.1 inches
- Resolution: 1280×800 pixels, 16:10 ratio

Platform:

- Chipset: StarFive JH7110
- CPU: 64-bit Quad-core 1.5 GHz SiFive U74 RISC-V
- GPU: Imagination Technology BXE-4-32

Memory:

- Internal Flash Memory: 64GB (variant 1) or 128GB (variant 2) eMMC module
- System Memory: 4GB (variant 1) or 8GB (variant 2) LPDDR4 SDRAM
- Expansion: micro SD Card support SDHC and SDXC, up to 2TB

Camera:

- Main Camera: 1920*1080 ,LED Flash (chipset: Omnivision OV5648)
- Selfie Camera: 1280*720 (chipset: Galaxycore GC02M2)

Sound:

- Loudspeaker: Yes, stereo
- 3.5mm jack with mic: Yes, stereo
- Sound IC: [ES8316](#)

Wireless:

- Chipset: Realtek RTL8852BU
- WLAN: Wi-Fi 802.11 ax/ac/b/g/n, dual-band, hotspot
- Bluetooth: 5.2, A2DP

I/O:

- 1x USB 3.0 Type-C port (front side 3.0, rear side 2.0)
- 1x USB 2.0 Type-C port (also use as charging and debug port)
- 1x USB 2.0 Pogo keyboard port
- 1x microHDMI HD Video output

Battery:

- Removable Li-Po 6000mAh battery
- Charging: 15W – 5V 3A
- Model 30100140 from [zgszjy](#)
- Charge IC: [BQ25890H](#)
- Fuel Guage: [CW2015CHBD](#)

3.2 Debian OS

Debian is an open-source GNU/Linux distribution created by the Debian community. Currently, StarFive provides a pre-built Debian image for users to flash into SD/eMMC, we use Gnome Wayland as the default windowing system. We've also included by default, FFmpeg, Firefox and VLC in the image.

- Debian Snapshot date
20221225T084846Z

- Gnome

Install the improved-osk-gnome extension by default

The Debian image provided is a rather clean image with minimal package installation for having a small image size. Hence, you will need to download the packages with script (`/opt/install_full.sh`), which includes:

Release Notes

- Node.js 18.0.0
- v8 10.2.154.13
- libSDL2
- Firefox 119.0.1-1
- Libreoffice 7.5
- NW.js
- FFmpeg
- GStreamer
- v4l2test (This is a custom shell script to use the CSI camera)
- Chromium 103
- VLC 3.0.18
- OpenCV
- libcamera-apps
- libcamera
- Mesa
- gnome-shell
- cogl
- codec (OpenMax)
- Clutter-gst

4 Test Report

This chapter contains This chapter includes test equipment, test results, etc.

4.1 Equipment

Table 4-1 Testing Equipment

Module	Plugin
PineTab-V	8GB RAM and 128GB eMMC storage with keyboard
UART	PineTab2 USB UARTv2
SD	SanDisk 32G
USB	Flash drive、 USB hub、 Key board 、 mouse、 USB microphone speaker
HDMI	G-story
BT	Keyboard(DELL)、 Mouse(DELL)、 phones、 PC、 Bluetooth speaker
Jack	Headphones with microphone

4.2 Applications

In addition to the default installation of applications and the installation tool in the /opt/install_full.sh script, Optional application is recommended

Table 4-2-2 Default installed applications and applications in the scripts

Applications	Recommended
System	Tweaks、 extentions
Internet	Firefox、 Chromium
Office	LibreOffice 7.5 series
Photo	Image viewer
Video	VLC

Table 4-2-2 Recommended installation application

Applications	Recommended
System monitoring tool	htop
Desktop icons	gnome-shell-extension-desktop-icons-ng
Language environment	fcitx
Input method	ibus-pinyin
Audio record	gnome-sound-recorder
photo	eog
Text editor	gedit
network	net-tools、iperf3

4.3 Cases overview

Table 4-3 Overview

Product	Pass	Fail	NA	SUM
PineTab-V	239	23	19	281

5 Known Issues/Limitations

The following tables list some key know issues

Table 6-1.Limitations

Category	Function	Description	Workaround
Hardware	Battery Charge	When battery charge below 8%, this may affected some functionality. Suggest charge the Pinetab-V when battery charge fall below 8%	
Software	Display	HDMI+MIPI activated together, MIPI desktop will display as portrait mode, and needs manually switch to Landscape mode.	
Applications	Firefox	Not support HEVC hardware decode	
		Note support MJPEG hardware decode	

Table 6-2. Known issues

Category	BugID	Description	Workaround
Hardware	-	When in low battery situation, Wifi driver not able loaded	No workaroud
Software	SW - Defect #16726	When audio recording using mic(onboard mic/earphone mic), there is no switch overwhen earphone mic plug in	Improve later
	SW - Defect #16671	Under Debian OS, battery consumption still high	

	SW - Defect #16603	After power off or restart 后, es8316print wrong message (I2C time out)	Only happen in certain Pi netab-V unit
	SW - Defect #16573	When open PPT document, the touchscreen not work well	Optimization issue
	SW - Defect #16733	When saving LibreOffice document, pull down window display error message	Optimization issue
Need to confirmed	-	Rough screen less sensitive in certain area	Occasionally happen
	-	Front and rear camera needs manually switching	
	-	Real camera has snowing effect and discolor but not affecting normal operation Front camera slight dim effect but not affecting normal operation	Still wait to confirm
	-	When connect Bluetooth to PC or mobile phone, the music playback heavily broken	Using Pineta b-V as bluetooth speaker is not a primary function, no plan to fix PAD

6 Appendix-A

This chapter provides a method for writing the SPI flash

Copy the files to the file system partition of the TF Card which used for factory testing

The file system partition is the fourth partition of the TF card, and the copy path is "/root/", and make sure the 3 files exist on the TF card

```
# ls -al
total 3242
drwx----- 7 root    root    1024 Jan  9  2025 .
drwxr-xr-x 18 root    root    1024 Jan  9  2025 ..
-rw----- 1 root    root     92 Jan  1 00:00 .ash_history
drwxr-xr-x 2 root    root    1024 Jun 28  2023 .config
drwxr-xr-x 2 root    root    1024 Jul 19  2023 ISP
drwxr-xr-x 2 root    root    1024 Jul 19  2023 e24
drwxr-xr-x 2 root    root    1024 Jul 19  2023 mailbox
-rwxrwxrwx 1 root    root   22984 Jul 19  2023 mjpeg_dec_test
-rwxr--r-- 1 root    root    839 Jan  9  2025 pinetab-update-uboot.sh
drwxr-xr-x 3 root    root    1024 Jul 19  2023 pinetabv_test_script
-rwxr-xr-x 1 root    root    123 Jun 28  2023 run_weston.sh
-rw-r--r-- 1 root    root  154176 Jan  9  2025 u-boot-spl.bin.normal.out
-rwxr-xr-x 1 root    root    3086 Jun 28  2023 usb_device.sh
-rwxrwxrwx 1 root    root   18768 Jul 19  2023 video_dec_test
-rwxrwxrwx 1 root    root   18808 Jul 19  2023 video_enc_test
-rw-r--r-- 1 root    root  3093125 Jan  9  2025 visionfive2_fw_payload.img
#
```

Plug the TF Card into PineTab-V and power on , run into kernel . Run the script : pinetab-update-uboot.sh

```
# sh pinetab-update-uboot.sh
Updating SPL...
Erasing blocks: 38/38 (100%)
Writing data: 150k/150k (100%)
Verifying data: 150k/150k (100%)
SPL updated successfully!
Updating U-Boot...
Erasing blocks: 756/756 (100%)
Writing data: 3020k/3020k (100%)
Verifying data: 3020k/3020k (100%)
U-Boot updated successfully!
Firmware update completed!
```

And then restart the board . If you see the date of u-boot is DEC 31 2024 . The update was successful.

```
U-Boot SPL 2021.10-00006-g196f587b95 (Dec 31 2024 - 15:51:12 +0800)
LPDDR4: 8G version: g8ad50857.
Trying to boot from SPI
```

```
U-Boot 2021.10-00006-g196f587b95 (Dec 31 2024 - 15:51:12 +0800)

CPU:   rv64imacu_zba_zbb
```


7 Appendix-B

This chapter provides a method for Camera



Camera配置.docx