1. What is a Single Board Computer

A single-board computer (SBC) is a complete computer built on a single circuit board, with microprocessor(s), memory, input/output (I/O) and other features required of a functional computer. Single-board computers were made as demonstration or development systems, for educational systems, or for use as embedded computer controllers. Many types of home computers or portable computers integrate all their functions onto a single printed circuit board.

2. What is Tinker Board

Tinker board packs a whole load of exciting feature into a very small space, and at an incredibly competitive price that's barely more than its manufacturing cost. ASUS has identified a clear DIY/maker market trend and we intend to create a big impact with our little board, so we've crammed in loads of tech while keeping our profits to a minimum — it's our little contribution to the DIY world.

Hardware

3. How powerful is the CPU processing

Tinker board features a powerful quad-core ARM Cortex-A17 1.8Ghz processor with a dual-channel DDR3 memory architecture. The performance is almost twice faster than the Raspberry Pi 3, and much higher than most of the SBC boards. For heavy computing loads like OpenCV projects, tinker board should be one of selected platform for your creation.

4. How powerful is the GPU processing

Tinker board has an integrated ARM Mali GPU T760 MP4 supports up to 4K that up-scaled from 1080P, and the GPU also supports H.264/H.265 4K hardware decoder for 4K content display.(update coming soon.)

5. Does the Tinker Board overheat or need a heatsink
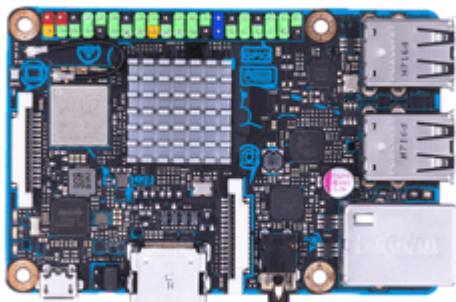
The performance of tinker board is much higher than most of the SBC boards, therefore the heat generation is also higher. But tinker board will comes with a passive heatsink to cool down the main SoC temperature.

(Do not touch the SoC or heatsink surface directly when powered tinker board to avoid possible skin burns.)

6. What type of hardware interfaces does the tinker board have

Tinker board has 4 x USB 2.0 ports, 1 x GbE LAN, 1 x 3.5mm audio jack with 192K/24bit audio, MIPI DSI/CSI

7. Can I add additional system memory

The memory was soldered and mounted on the board during manufacturing, and did fully test before shipping out. Even the SoC can supports for higher memory capacity, but we'll strongly recommend you do not swap the memory by yourself.

8. What tinker board's range of temperature operation

The operation temperature is between 30°C ~ 80°C based on the system loadings.

9. Can I connect a keyboard and mouse and use the tinker board as a computer / PC

Yes, with the available operating system for tinker board, you can run tinker board as a linux-based mini system for daily operation or enjoy the media content thru this tiny board.

10. What are the tinker board's dimensions

tinker board measures 85.60mm x 56mm x 21mm (or roughly 3.37" x 2.21" x 0.83").

11. How much does the tinker board weigh

tinker board weighs 55g with the heatsink.

12. Is the tinker board compatible with RasperryPI cases

Yes, tinker board can compatible with most of the chassis for Raspberry Pi.

13. What SoC are used in the tinker board

The tinker board uses the Rockchip RK3288 series. This contains an quad-core ARM cortex A17, running at 1.8Ghz, and a Mali T760 MP4 GPU.

14. What type of Wi-Fi does the tinker board offer

The Wi-Fi solution is AW-NB177NF module, it contains a Realtek RTL8723BS IC, supports the Wi-Fi 802.11 b/g/n, and Bluetooth 4.0 + EDR.

15. What type of Bluetooth does the tinker board offer

Bluetooth 4.0 with EDR

16. Is the Ethernet port / LAN shared with the USB

The Ethernet port is working individually.

17. What type of hardware decoding does the tinker board offer

The GPU supports H.264/H.265 hardware decoder for media contents.(update coming soon)

18. Does the tinker board support an IR blaster

tinker board didn't equip IR transmitter, but tinker board has many GPIO expansion pins allowing this kind of extension.

19. What is the power requirement for the tinker board

tinker board supports 5V/2~2.5A power input, and a capable cable with 24~20 AWG for large current power.

20. Can the tinker board being powered by a battery

Yes, if the battery can supports power output with 5V/2A.

21. What type of microSD cards are supported

The MicroSD slot was from a SDIO 3.0 signal, allowing the MicroSD card with UHS-I

22. What type of SD card is recommended

The MicroSD slot was from a SDIO 3.0 signal, allowing the MicroSD card with UHS-I speed. And we recommend using the card size at least 8GB.

23. What resolutions are supported for the HDMI output

The maximum HDMI output supports up to 4K/30fps, up-scaled from 1080P.

24. What display outs are supported

There're two display interfaces on tinker board, one is HDMI & the other is MIPI DSI.

25. Which HDMI version is supported

HDMI 1.4

26. Is sound supported through HDMI

Yes, the sound output can be worked from HDMI or the 192K/24bit audio jack.

27. What type of audio in and audio out are supported.

The 3.5mm audio jack on tinker board can supports Mic-in and Line-out at the same time.

28. Does the tinker board have a realtime clock feature (RTC)

No, but there're so many alternatives available on the market.

29. What is the DSI port

The Display Serial Interface (DSI) is a specification by the Mobile Industry Processor Interface (MIPI) alliance, DSI is commonly targeted at LCD and similar display technologies. It defines a serial bus and a communication protocol between the host (source of the image data) and the device (destination of the image data).

30. What model of LCD panel is compatible with the tinker board

The DSI interface is refer to the most popular design from Raspberry Pi, that allows users to connect the 7" display from Raspberry.

31. What else will I need after I purchase a tinker board

Get a keyboard, mouse, USB AC adaptor, a monitor with HDMI, and a micro SD card with 8GB capacity. Then download the OS image from its website, and burn into the micro SD card.

32. Does the tinker board support Expansion shields

Yes, the 40-pin GPIO equipped several signals for expansion. It will works with the GPIO API.

Software

33. How does the tinker board boot

All the files necessary for booting are installed in a FAT32 partition of the SD card. The tinker board has to have an SD card installed to boot from.

34. What OS does the tinker board support

Currently Debian is the only available OS for tinker board.

35. Which LINUX runs on the tinker board

TinkerOS (based on Debian)

36. Does the tinker board support Arduino

Yes

37. How to boot up Tinker Board with Tinker OS – Debian/Android ?

Please refer to the demo video from the following links :

Debian: https://www.youtube.com/watch?v=8zXFyQTxM7U&feature=youtu.be

Android: https://www.youtube.com/watch?v=o3p68xhxQyE&feature=youtu.be

Booting from onboard eMMC(for Tinker Board S)

Requirement:

• 1 x Micro USB cable with data transfer function

• 1 x Tinker Power Supply* or other qualified 5V/3A power supply**

• 1 x Monitor with HDMI cable

• 1 x Keyboard and Mouse set

* The Tinker Power Supply is purchased seperately.

** Ensure that the cable is able to deliver up to 3A of power current.

1. Connect the Tinker Board S to a PC with a Micro USB cable, then wait for the PC to recognize the device.
2. Download the TinkerOS image from the Tinker Board website and burn it into the Tinker Board S by a third-party ISO software, such as Win32DiskImager or Etcher.
3. Connect the power supply, keyboard, mouse, and monitor to your Tinker Board S to boot up.

Booting from external Micro SD card(for Tinker Board &Tinker Board S)

Requirement:

• 1 x Micro SD card with at least 8GB capacity

• 1 x Tinker Power Supply* or other qualified 5V/3A power supply**

• 1 x Monitor with HDMI cable

- 1 x Keyboard and Mouse set

*   *The Tinker Power Supply is purchased seperately.*

** *Ensure that the cable is able to deliver up to 3A of power current.*

1. Insert the micro SD card into a Windows® PC
2. Download the TinkerOS image from the Tinker Board website and burn it into the micro SD card by a third-party ISO software, such as Win32DiskImager or Etcher.
3. Insert the bootable micro SD card into your Tinker Board, then connect the power supply, keyboard, mouse, and monitor to boot up.