Tinker Board 3N Series

User Manual

HIGH-DEFINITION MULTIMEDIA INTERFACE

E23365
First Edition
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Contents

About this manual

This manual provides information about the hardware and software features of your Single Board Computer, organized through the following chapters:

Chapter 1: Product Overview

This chapter details the features of your Single Board Computer.

Chapter 2: Product Introduction

This chapter provides you with description of the jumpers, headers, connectors, and I/O ports on your Single Board Computer.

Chapter 3: Software Installation

This chapter will guide you in setting up your Single Board Computer for the first time.

Appendix

This section includes notices and safety statements for your Single Board Computer.

Conventions used in this manual

To highlight key information in this manual, some text are presented as follows:

IMPORTANT! This message contains vital information that must be followed to complete a task.

NOTE: This message contains additional information and tips that can help complete tasks.

WARNING! This message contains important information that must be followed to keep you safe while performing certain tasks and prevent damage to your Single Board Computer's data and components.

1

Product Overview

1.1 Introduction

Tinker Board 3N Series is more than a dream for the DIY-obsessed: it's a gateway to new ideas and new relationships. Experienced makers will love Tinker Board's performance-to-price ratio and strong brand heritage, while novices and younger users will appreciate its accessibility and ease of use. But all will come together to create — Together We Make!

1.2 Features

Robust, Resilient NUC-size Design

- Enhanced GPU and UX performance
- Efficient memory performance
- Crafted for system integration
- CrashFree UMS mode

Enhanced Connectivity

- Support the latest wireless module
- Robust support for multiple display outputs
- Expandability for industrial solutions

Latest Operating Systems Supported

- Debian 11 with Kernel 5.10.y
- Linux Yocto
- Android 12
- Support FOTA for Android and Linux

1.3 Package contents

Check your package for the following items:

- 1 x Tinker Board 3N
- 1 x Heatsink*
- 2 x Wi-Fi/Bluetooth antenna cables
- 1 x Shielding bag

* **Beware of high temperatures when only using the bundled heatsink.**

1.4 Product specifications

Tinker Board Series		3N Plus	3N	3N Lite
Processor	SoC	Rockchip RK3568		
	CPU	Quad-core Arm® Cortex®-A55		
	GPU	Arm® Mali™-G52		
Memory	Technology	Dual-CH LPDDR4X		
	Size	2 GB / 4 GB*	2 GB / 4 GB / 8 GB*	
Storage	Memory Card	MicroSD (TF) card slot (push/pull)		
	eMMC	None / 32 GB / 64 GB*		
	SPI Flash	16 MB		-
Ethernet	Speed	10/100/1000 Mbps		
	Controller	2 x LAN (RJ45) RTL8211F/FI ports		1 x LAN (RJ45) RTL8211F/FI port
	PoE PD	PoE PD support for 1 x LAN (RJ45) port via a PoE module (purchased separately), 802.3at 25 W		-
Wireless	Wi-Fi / BT	1 x Wi-Fi 5 & BT 5.0 (2T2R)*, default occupies M.2 E-key		
Expansion Slots	M.2 E-key (2230)	1 x for Wi-Fi 5/6 & BT (PCIe 2.0 x1, USB 2.0) Default for 1 x 802.11 a/b/g/n/ac wireless & BT 5.0 (2T2R)		
	M.2 B-key (3042/3052) with nano SIM slot	1 x for 4G/5G/SSD (PCIe 3.0 x1, USB 3.0, USB 2.0, SIM)		-
Display	HDMI	1 x up to 4096 x 2160 @ 60 Hz		
	LVDS	1 x up to 1920 x 1080 @ 60 Hz (Dual-link)		
	eDP	1 x up to 2560 x 1600 @ 60 Hz		
	Multi-display	HDMI + LVDS or HDMI + eDP		
Audio	Audio Out	1 x 3.5 phone jack with Mic-in		
	Speaker Out	1 x 4-pin stereo, 4 ohm, 2x3 W		
	S/PDIF	1 x S/PDIF TX pin (from GPIO)		
USB	USB 3.2 Gen 1	1 x Type-C® OTG port		
	USB 3.2 Gen 1	2 x Type-A ports		
	USB 2.0	1 x 9-pin header (supports 2 ports)		
Serial Interface	CAN bus 2.0B	1 x 3-pin header		-
	RS-232 (w/ flow control)	2 x 5-pin header		-
	RS-232/422/485	1 x 5-pin header		

* **Actual specification depends on model**

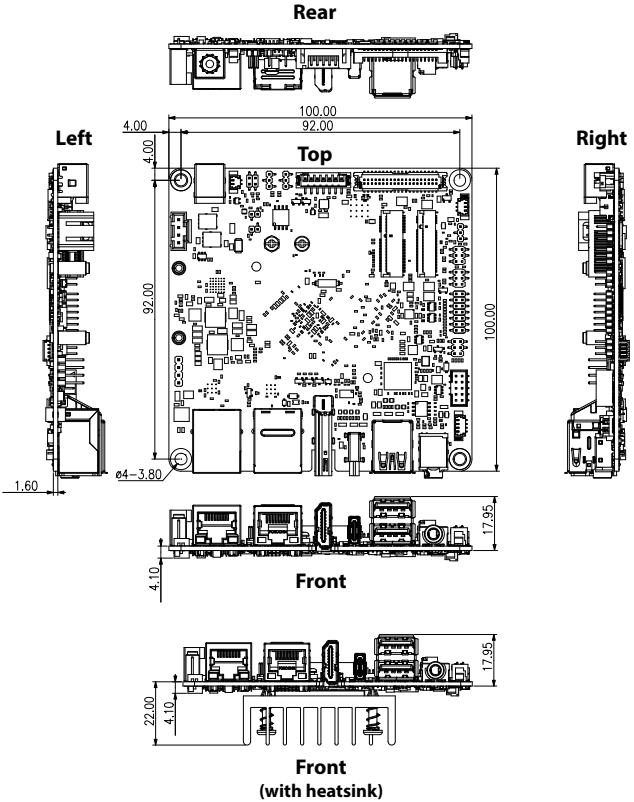
(continued on the next page)

Tinker Board Series		3N Plus	3N	3N Lite
Other Internal I/O & Headers	14-pin GPIO	1 x 5 V power 1 x 3.3 V power 1 x ground 9 x GPIO 2 x ADC (8-bit) up to 2 x UART bus up to 1 x I2C bus up to 1 x SPI bus (2 select) up to 1 x I2S bus up to 4 x PWM up to 1 x S/PDIF TX		
	Debug UART	1 x 3-pin header		
	Power-on & Reset	1 x 4-pin header		
	DC Fan	1 x 4-pin header		
	RTC Battery	1 x 2-pin header		
	Recovery	1 x 2-pin jumper**		
	MASK ROM (SPI Flash)	1 x 2-pin header		-
	MASK ROM (eMMC)	1 x DIP switch**		
	IR Receiver	1 x 3-pin header		
	Status LEDs	3 x (Power, Disk, Reserve)		
Power	Power Input (12 ~ 24 Vdc)	1 x DC-in Power jack (5.5/2.5 mm Barrel) 1 x DC-in Power header (also for PoE module)		
Environment	Operating Temp	-40°C ~ 85°C	0°C ~ 60°C	
	Non-operating Temp	-40°C ~ 85°C		
	Non-operating Humidity	10% ~ 85% (non-condensing)		
OS Support		Linux Debian / Yocto / Android***		
Dimensions		4" x 4" (100 mm x 100 mm)		

*** Actual specification depends on model**
**** Available on selected models**
***** Please find the latest OS support from https://tinker-board.asus.com/**

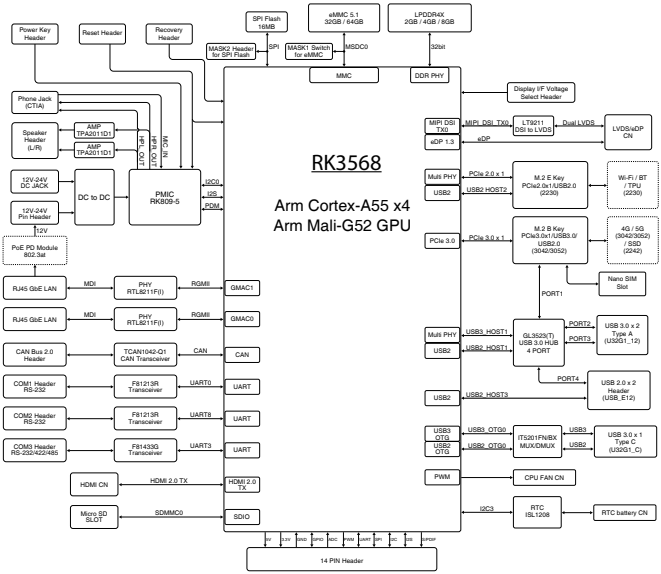
NOTE: Specifications are subject to change without notice.

1.5 Dimensions



NOTE: All dimensions are in millimeters (mm).

1.6 Block diagram



2

Product Introduction

2.1 Before you proceed

Take note of the following precautions before connecting your Single Board Computer or changing any settings.

NOTE: The diagrams in this chapter are for reference only. Your Single Board Computer layout may vary depending on model.

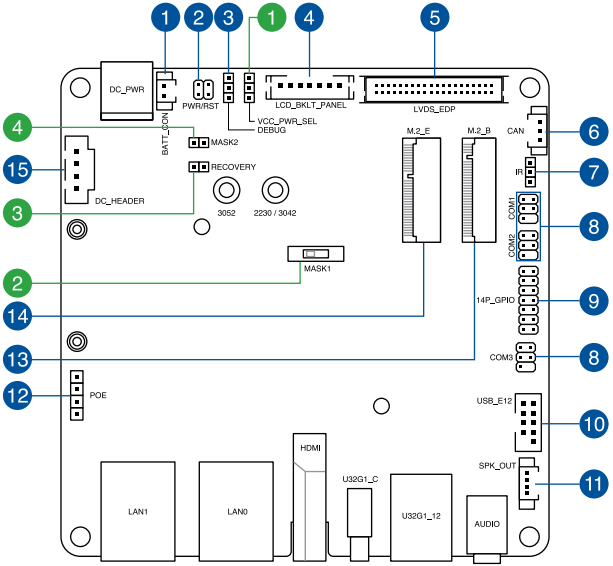
IMPORTANT! Components shown in this section may be purchased separately. Refer to the *Package contents* section for more information about the contents of your Single Board Computer package.

WARNING!

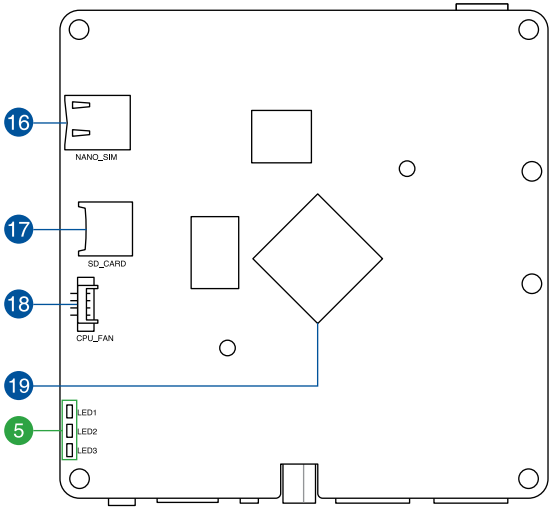
- Unplug the power cord from the wall socket before touching any component.
- Before handling components, use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, to avoid damaging them due to static electricity.
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded anti-static pad or in the bag that came with the component.
- Before you install or remove any component, ensure that the power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the Single Board Computer, peripherals, or components.

2.2 Single Board Computer layout

Top view



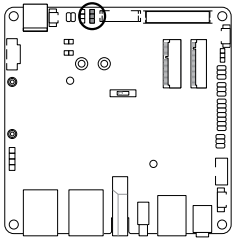
Bottom view



2.3 Jumpers, switches, and LEDs

1. Display Panel VCC Power Selection jumper (3-pin)

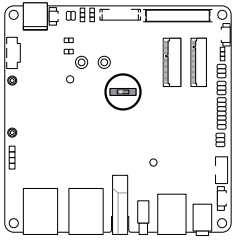
The Display Panel VCC Power jumper allows you to select the voltage for the LVDS panel.



Connector Type	PIN HEADER 3P 2.0MM
Reference PN	DUPONT 2.0 TYPE

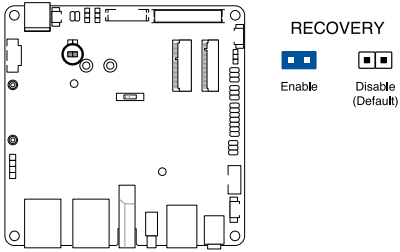
2. eMMC Mask ROM DIP switch (on selected models with eMMC)

The eMMC Mask ROM DIP switch when toggled ON allows you to mask the eMMC (ROM) to enter Mask ROM mode for recovery.



3. Recovery jumper (2-pin) (on selected models with eMMC)

The Recovery jumper allows you to enter recovery mode upon reboot to rewrite the eMMC. Place a jumper cap over these pins to enable rebooting to recovery mode.

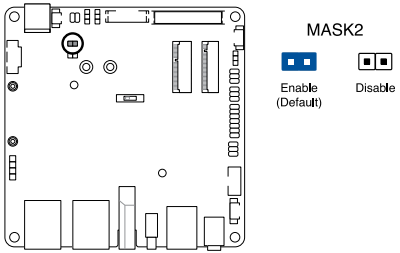


Connector Type	PIN HEADER 2P 2.0MM
Reference PN	DUPONT 2.0 TYPE

4. SPI Flash Mask jumper (2-pin)

The SPI Flash Mask jumper allows you to disable the SPI flash mask (removing the jumper cap) when you want to boot from SPI flash to enter UMS mode and overwrite the eMMC.

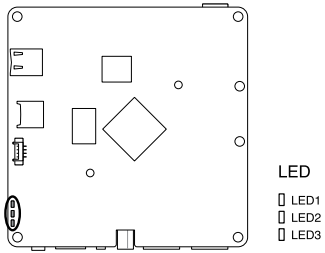
NOTE: UMS mode allows a device connected to a PC to be mounted as a storage drive.



Connector Type	PIN HEADER 2P 2.0MM
Reference PN	DUPONT 2.0 TYPE

5. Status LEDs

The Status LEDs indicate the current status of the Single Board Computer.

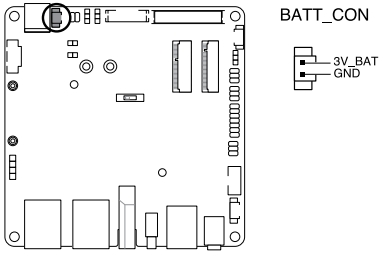


LED Indication		
LED 1 (Red)	**LED 2 (Green)**	**LED 3 (Yellow)**
Power	Disk Activity	Reserved (Programmable)

2.4 Headers and slots

1. RTC Battery header (2-pin)

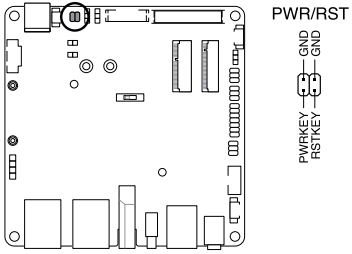
The RTC Battery header allows you to connect the lithium battery.



Connector Type	WtoB CON 2P 1.25MM
Reference PN	MOLEX/510210200

2. Power / Reset header (4-pin)

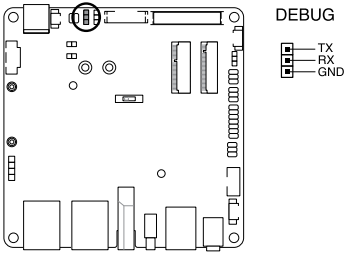
The Power / Reset header allows you to connect an external power/ reset button.



Connector Type	PIN HEADER 2X2P 2.0MM
Reference PN	MOLEX/511100450

3. Debug UART header (2-pin)

The Debug UART header allows you to access a debug terminal with a 3.3 V UART interface and a default Baud rate of 1500000.

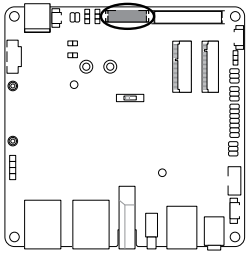


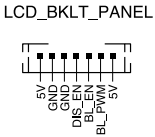
Connector Type	PIN HEADER 3P 2.0MM
Reference PN	DUPONT 2.0 TYPE

4. Backlight Inverter Power header (7-pin)

This 7-pin header allows you to power the backlight inverter on a display panel via a backlight inverter module.

IMPORTANT! The Backlight Inverter Power header supports a maximum current of 3A.

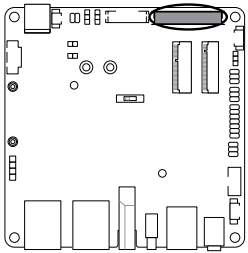


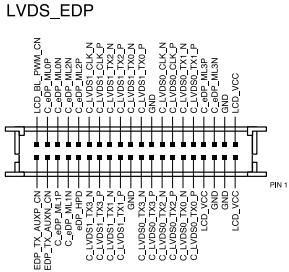


Connector Type	WAFER HD 7P 2.0MM
Reference PN	JST/PHR-2 SERIES

5. LVDS header (40-pin)

The LVDS header allows you to connect an LCD monitor that supports a Low-voltage Differential Signaling (LVDS) interface.

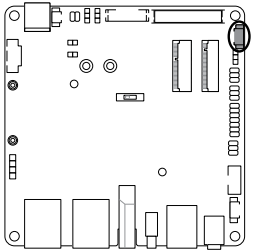


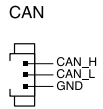


Connector Type	WtoB CON 2X20P 1.25MM
Reference PN	HRS/DF13-40DS-1.25C

6. CAN Bus Serial header (3-pin)

The CAN Bus Serial (CAN) header allows you to connect devices with a CAN interface, such as an electronic control unit (ECU).

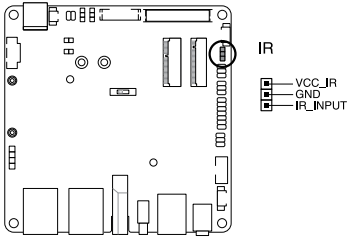




Connector Type	WtoB CON 3P 1.25MM
Reference PN	MOLEX/510210300

7. IR Receiver header (3-pin)

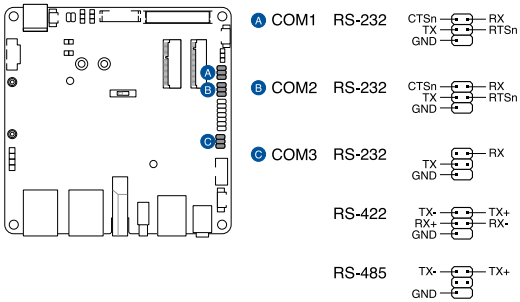
The IR Receiver header allows you to connect a remote sensor to receive and interpret infrared signals.



Connector Type	PIN HEADER 3P 2.0MM
Reference PN	DUPONT 2.0 TYPE

8. Serial (COM) Port header (6-1 pin) (COM1 and COM2 on selected models)

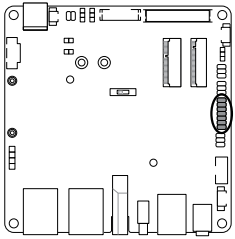
The Serial (COM) Port header allows you to connect a serial port module. Connect the serial port module cable to this header, then install the module to a slot opening on the system chassis.

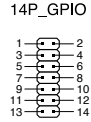


Connector Type	PIN HEADER 2X3P 2.0MM
Reference PN	MOLEX/511100650

9. GPIO header (14-pin)

This 14-pin GPIO (General-Purpose Input/Output) header can be designated (in software) as an input or output pin and is used for a wide range of purposes. Of the 14 pins, 9 are GPIO pins (shared with SPI/UART/I2C pins).



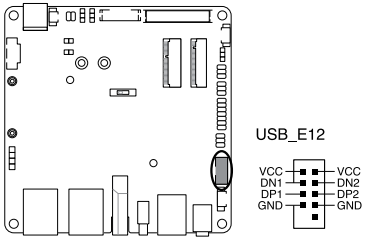


ALT Fun 1	ALT Fun 0	PIN		ALT Fun 0	ALT Fun 1	ALT Fun 2	ALT Fun 3	ALT Fun 4
VCC_5V		1	2	VCC_3.3V				
GND		3	4	GPIO4_C2	I2S3_MCLK	SPI3_CLK	PWM14	
UART4_RX	GPIO3_B1	5	6	GPIO4_C3	I2S3_SCLK	SPI3_MOSI	PWM15_IR	
UART4_TX	GPIO3_B2	7	8	GPIO4_C4	I2S3_LRCK	SPI3_CS1	SPDIF_TX	
I2C5_SCL	GPIO3_B3	9	10	GPIO4_C5	I2S3_SDO	SPI3_MISO	PWM12	UART9_TX
I2C5_SDA	GPIO3_B4	11	12	GPIO4_C6	I2S3_SDI	SPI3_CS0	PWM13	UART_RX
	SARADC_VIN6	13	14	SARADC_VIN7				

Connector Type	PIN HEADER 2X7P 2.0MM
Reference PN	MOLEX/511100450

10. USB 2.0 header (10-1 pin)

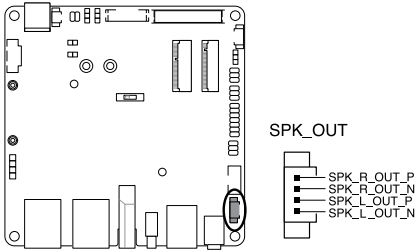
The USB 2.0 header allows you to connect a USB module for additional USB 2.0 ports. The USB 2.0 header provides data transfer speeds of up to 480 MB/s connection speed.



Connector Type	PIN HEADER 2X5P 2.0MM
Reference PN	MOLEX/511101050

11. Internal Speaker header

The Internal Speaker header allows you to connect a chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings.

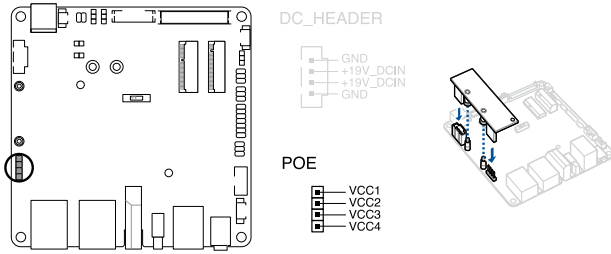


Connector Type	WtoB CON 4P 1.25MM
Reference PN	MOLEX/510210400

12. PoE VCC-out header (4-pin) (on selected models)

The PoE VCC-out header together with the DC power-in header allows you to install a PoE module to enable one of the LAN ports to support Power-over-Ethernet (PoE). Connect the PoE VCC-out header and the DC power-in header to the VCC-in header and the DC power-out header on the PoE module, respectively.

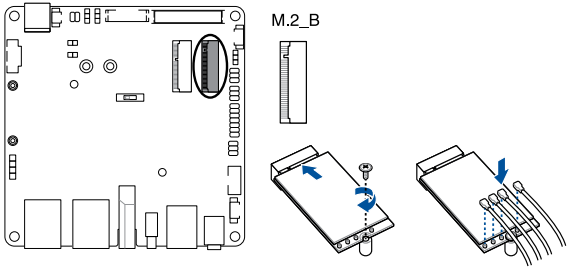
NOTE: If you are installing a PoE module, connect the DC power-out header on it to this header.



Connector Type	PIN HEADER 4P 2.54MM
Reference PN	JST/RE-04

13. M.2 (B-Key) Slot (on selected models)

The M.2 B-key slot allows you to install an M.2 4G LTE or 5G NR module (B-key, type 3042/3052). If necessary, move and reinstall the standoff, based on the length of your M.2 module.

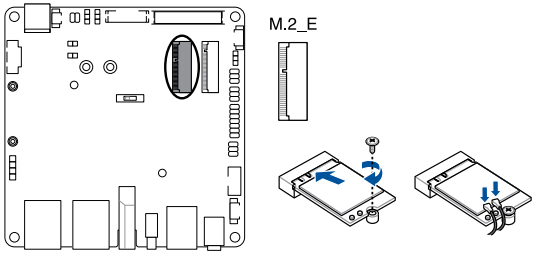


NOTE:

- The M.2 4G LTE/5G NR module is purchased separately.
- Avoid mounting or placing the antennas on a metal surface as it can be detrimental to antenna performance.

14. M.2 (E-Key) Slot

The M.2 E-key slot allows you to install an M.2 Wi-Fi module (E-key, type 2230).



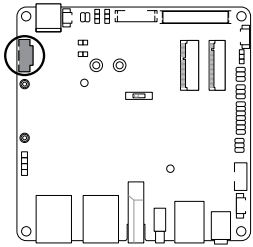
NOTE:

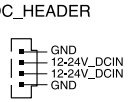
- The M.2 Wi-Fi module is purchased separately.
- Avoid mounting or placing the antennas on a metal surface, as it can be detrimental to antenna performance.

15. DC-in Power header

The DC-in Power header is for DC power input. Using a compatible power cable and power board, you may connect a suitable power supply with DC-in jacks.

NOTE: If you are installing a PoE module, connect the DC power-out header on it to this header.

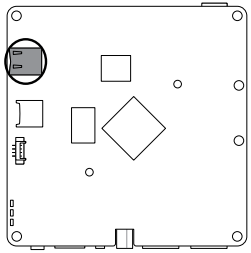


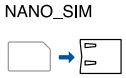


Connector Type	WAFER HD 4P 2.54MM
Reference PN	MOLEX/50579404

16. Nano SIM Card slot

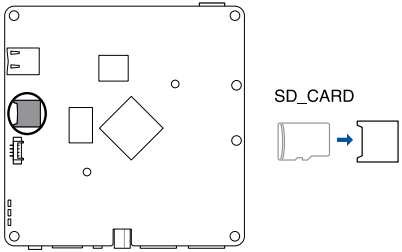
The Nano SIM card slot allows you to install a nano SIM card.





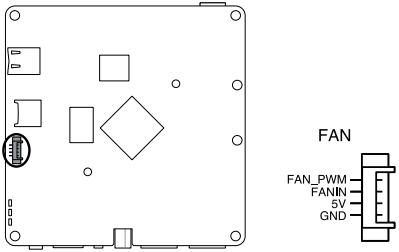
17. MicroSD Card slot

The MicroSD card slot allows you to install a microSD memory card.



18. CPU Fan header (4-pin)

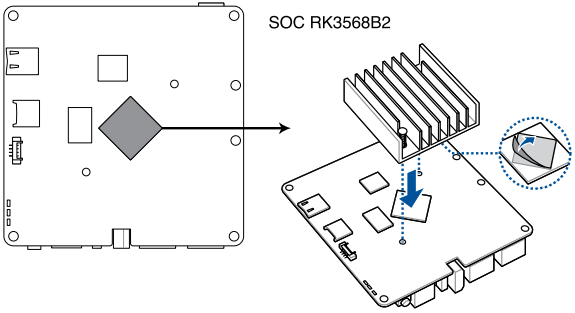
The CPU Fan header allows you to connect a fan to cool the CPU. Connect the cables from the fan to this header, ensuring that the black cable is connected to the ground pin.



Connector Type	WtoB CON 4P 1.25MM
Reference PN	MOLEX/510210400

19. SOC Rockchip RK3568

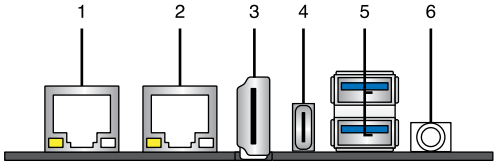
This AIoT processor is a 64-bit quad-core Cortex-A55 SoC.



WARNING! Beware of high temperatures when only using the bundled heatsink.

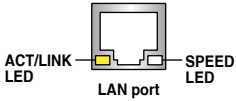
2.5 I/O connectors

2.5.1 Front panel



1. LAN (RJ-45) port (optional PoE PD support)

The 8-pin RJ-45 LAN port supports a standard Ethernet cable for connection to a local network. Please refer to the table below for the LED indications.



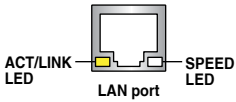
Activity Link LED	
Status	**Description**
Off	No link
Yellow	Linked
Yellow (Blinking)	Data activity
Yellow (Blinking then steady)	Ready to wake up from S3 mode

Speed LED	
Status	**Description**
Off	10 Mbps connection
Orange	100 Mbps connection
Green	1 Gbps connection

NOTE: For PoE PD support, connect a PoE module (purchased separately) to the PoE VCC-out and DC-in Power headers (refer to the *Motherboard layout* section for the locations).

2. LAN (RJ-45) port

The 8-pin RJ-45 LAN port supports a standard Ethernet cable for connection to a local network. Please refer to the table below for the LED indications.



Activity Link LED	
Status	**Description**
Off	No link
Yellow	Linked
Yellow (Blinking)	Data activity
Yellow (Blinking then steady)	Ready to wake up from S3 mode

Speed LED	
Status	**Description**
Off	10 Mbps connection
Orange	100 Mbps connection
Green	1 Gbps connection

3. HDMI™ port

The HDMI™ (High Definition Multimedia Interface) port supports a Full-HD device, such as an LCD TV or monitor, to allow viewing on a larger external display.

NOTE: When using only this port as a display output source, this port will support a resolution of up to 4096 x 2160 @60Hz. The resolution may also be affected by the cabling and output device.

4. USB 3.2 Gen 1 Type-C® OTG port

This USB Type-C® (Universal Serial Bus) port provides a transfer rate of up to 5 Gbit/s and supports OTG mode, which allows this device to read data from a USB device even when it's not connected to a PC.

5. USB 2.0 port

The USB (Universal Serial Bus) port is compatible with USB 2.0 or USB 1.1 devices, such as keyboards, pointing devices, flash disk drives, external HDDs, speakers, cameras, and printers.

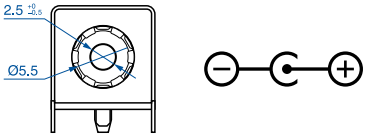
6. Audio jack

The audio jack allows you to connect external speakers or headphones for audio output.

2.5.2 Rear panel

1. DC-in Power jack

The supplied power adapter converts AC power to DC power for use with this jack (5.5mm/2.5mm). Power supplied through this jack supplies power to your Single Board Computer. To prevent damage to your Single Board Computer, always use the supplied power adapter. Please refer to the table below for the power consumption.



Power Consumption	
Mode	**Power (W)**
S5 (power off)	0.037
S3 (suspend)	0.961
Idle	2.218
Burn-in*	7.394
Max. Load**	44.894

*** CPU, GPU, RAM, eMMC, microSD, LAN, etc. stress test.**

**** Results based on test with 2 x USB 3.0 Type-A 5V/0.9A, 2 x USB Type-C® 5V/1.5A, LCD & backlight 15W, LTE module 6W, total up to 37.5W.**

3

Software Installation

3.1 Booting from microSD card

3.1.1 Requirements

Before you start setting up your Single Board Computer, make sure you have the following available:

- 1 x microSD card with at least 8 GB capacity
- 1 x 12~24 V, DC 5.5/2.5 power supply*
- 1 x Monitor with HDMI™ cable
- 1 x Keyboard and Mouse set

* **The Power Supply is purchased separately.**

NOTE: Make sure to use the bundled power supply, or if you are using another power supply, ensure to use a 12~24 V power supply.

3.1.2 Installing or updating the OS

Follow the steps below for installing and updating the OS image as they are the same.

1. Insert a microSD card into a Windows® PC.
2. Download the TinkerOS image from the Tinker Board website (https://tinker-board.asus.com/download.html) and burn it into the microSD card using a third-party ISO software, such as *Etcher*.
3. Insert the bootable microSD card into your Single Board Computer, and then connect the power supply, keyboard, mouse, and monitor to boot up.

3.2 Booting from onboard eMMC

NOTE: Booting from the onboard eMMC is only available for selected models with eMMC.

3.2.1 Requirements

- 1 x USB Type-C® cable with data transfer function
- 1 x 12~24 V, DC 5.5/2.5 power supply*
- 1 x Monitor with HDMI™ cable
- 1 x Keyboard and Mouse set

* **The Power Supply is purchased separately.**

3.2.2 Setting up

Follow the steps below for installing and updating the OS image as they are the same.

1. Connect the micro USB OTG port on your Single Board Computer (refer to the *Front panel* section for location) to a host PC using a USB Type-C® cable.
2. Connect the power adapter to your Single Board Computer.
3. Download the TinkerOS image from the Tinker Board website (https://tinker-board.asus.com/download.html) and burn it into your Single Board Computer using a third-party ISO software, such as Etcher.
4. After the TinkerOS image is successfully burned, disconnect all cables from your Single Board Computer.
5. Connect the power supply, keyboard, mouse, and monitor to your Single Board Computer to boot up.

Appendix

Safety information

Your Single Board Computer is designed and tested to meet the latest standards of safety for information technology equipment. However, to ensure your safety, it is important that you read the following safety instructions.

NO DISASSEMBLY

The warranty does not apply to the products that have been disassembled by users

Setting up your Single Board Computer

- Read and follow all instructions in the documentation before you set up your Single Board Computer.
- Do not use this product near water or a heated source.
- Set up the Single Board Computer on a stable surface.
- Use this product in environments with ambient temperatures between 0˚C and 60˚C.
- If you use an extension cord, make sure that the total ampere rating of the devices plugged into the extension cord does not exceed its ampere rating.
- This product should be connected by means of a power cord to a socket-outlet with earthing connection.

Safety Precautions

Accessories that came with this product have been designed and verified for the use in connection with this product. Never use accessories for other products to prevent the risk of electric shock or fire.

安全上のご注意

付属品は当該専用品です。他の機器には使用しないでください。機器の破損もしくは、火災や感電の原因となることがあります。

Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill water or any other liquids on your Single Board Computer.
- When the Single Board Computer is turned off, a small amount of electrical current still flows. Always unplug the power cord from the power outlets before handling the product.
- If you encounter the following technical problems with the product, unplug the power cord and contact a qualified service technician or your retailer.
  - The power cord or plug is damaged.
  - Liquid has been spilled onto the product.
  - The product does not function properly even if you follow the operating instructions.
  - The product was dropped.
  - The performance changes.
- Avoid contact with hot components inside the Single Board Computer. During operation, some components become hot enough to burn the skin. Before you open the computer cover, turn off the computer, disconnect the power, and wait approximately 30 minutes for the components to cool.
- Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, that can result in an explosion;
- Leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas;
- Avoid handling or touching the product while powered, as the outer casing may reach temperatures of up to 70˚C.

HDMI Trademark Notice

The terms HDMI, HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.

Regulatory notices

FCC Compliance Information

Responsible Party:	Asus Computer International
Address:	48720 Kato Rd., Fremont, CA 94538, USA
Phone / Fax No:	(510)739-3777 / (510)608-4555

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.

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 RF Caution Statement

WARNING! Any changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

FCC RF Exposure Information

This device meets the government's requirements for exposure to radio waves. This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government. The exposure standard employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6 W/kg. Tests for SAR are conducted using standard operating positions accepted by the FCC with the EUT transmitting at the specified power level in different channels. The FCC has granted an Equipment Authorization for this device with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this device is on file with the FCC and can be found under the Display Grant section of www.fcc.gov/oet/ea/fccid.

Compliance Statement of Innovation, Science and Economic Development Canada (ISED)

This device complies with Innovation, Science and Economic Development Canada licence exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

CAN ICES-003(B)/NMB-003(B)

Déclaration de conformité de Innovation, Sciences et Développement économique Canada (ISED)

Le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

CAN ICES-003(B)/NMB-003(B)

KC: Korea Warning Statement

B급 기기 (가정용 방송통신기자재)
이 기기는 가정용(B급) 전자파적합기기로서 주로 가정에서 사용하는 하며, 모든 지역에서 사용할 수 있습니다.

VCCI: Japan Compliance Statement

Class B ITE

この装置は、クラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

ＶＣＣＩ－Ｂ

「產品之限用物質含有情況」之相關資訊，請參考下表：

Taiwan Declaration of Restricted Substances Marking

單元 (Unit)	限用物質及其化學符號 (Restricted substances and its chemical symbols)					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyls ethers (PBDE)
印刷電路板及電子組件 PCB	—	○	○	○	○	○
其他及其配件（線材等） Accessories (e.g., cables)	—	○	○	○	○	○

備考 1. “○” 係指該項限用物質之百分比含量未超出百分比含量基準值。

備考 2. “—” 係指該項限用物質為排除項目。

Note 1 “○“ indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

Note 2 The “—“ indicates that the restricted substance corresponds to the exemption.

Declaration of compliance for product environmental regulation

ASUS follows the green design concept to design and manufacture our products, and makes sure that each stage of the product life cycle of ASUS product is in line with global environmental regulations. In addition, ASUS disclose the relevant information based on regulation requirements.

Please refer to https://csr.asus.com/Compliance.htm for information disclosure based on regulation requirements ASUS is complied with:

EU REACH and Article 33

Complying with the REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals) regulatory framework, we publish the chemical substances in our products at ASUS REACH website at https://csr.asus.com/english/REACH.htm

EU RoHS

This product complies with the EU RoHS Directive. For more details, see https://csr.asus.com/english/article.aspx?id=35

Japan JIS-C-0950 Material Declarations

Information on Japan RoHS (JIS-C-0950) chemical disclosures is available on https://csr.asus.com/english/article.aspx?id=19

India RoHS

This product complies with the "India E-Waste (Management) Rules, 2016" and prohibits use of lead, mercury, hexavalent chromium, polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs) in concentrations exceeding 0.1% by weight in homogenous materials and 0.01% by weight in homogenous materials for cadmium, except for the exemptions listed in Schedule II of the Rule.

Vietnam RoHS

ASUS products sold in Vietnam, on or after September 23, 2011,meet the requirements of the Vietnam Circular 30/2011/TT-BCT.

Các sản phẩm ASUS bán tại Việt Nam, vào ngày 23 tháng 9 năm2011 trở về sau, đều phải đáp ứng các yêu cầu của Thông tư 30/2011/TT-BCT của Việt Nam.

Türkiye RoHS
AEEE Yönetmeliğine Uygundur

ASUS Recycling/Takeback Services
ASUS recycling and takeback programs come from our commitment to the highest standards for protecting our environment. We believe in providing solutions for you to be able to responsibly recycle our products, batteries, other components as well as the packaging materials. Please go to https://csr.asus.com/english/Takeback.htm for detailed recycling information in different regions.

Ecodesign Directive
European Union announced a framework for the setting of ecodesign requirements for energy-related products (2009/125/EC). Specific Implementing Measures are aimed at improving environmental performance of specific products or across multiple product types. ASUS provides product information on the CSR website. The further information could be found at https://csr.asus.com/english/article.aspx?id=1555.

DO NOT throw the device in municipal waste. This product has been designed to enable proper reuse of parts and recycling. This symbol of the crossed out wheeled bin indicates that the product (electrical, electronic equipment, and mercury-containing button cell battery) should not be placed in municipal waste. Check local technical support services for product recycling.

France sorting and recycling information

Simplified UKCA Declaration of Conformity

ASUSTeK Computer Inc. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of related UKCA Directives. Full text of UKCA declaration of conformity is available at: www.asus.com/support

UKCA RF Output table (The Radio Equipment Regulations 2017)
RTL8822CE output power table:

Function	Frequency	Max Output Power (EIRP)
Wi-Fi	2412-2472 MHz	19 dBm
	5150-5350 MHz	22 dBm
	5470-5725 MHz	22 dBm
Bluetooth	2402-2480 MHz	13 dBm

*** Receiver category 1**

Simplified EU Declaration of Conformity

Simplified EU Declaration of Conformity

ASUSTek Computer Inc. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. Full text of EU declaration of conformity is available at https://www.asus.com/support/

Déclaration simplifiée de conformité de l'UE

ASUSTek Computer Inc. déclare par la présente que cet appareil est conforme aux critères essentiels et autres clauses pertinentes de la directive 2014/53/EU. La déclaration de conformité de l'UE peut être téléchargée à partir du site internet suivant :
https://www.asus.com/support/

Vereinfachte EU-Konformitätserklärung

ASUSTek COMPUTER INC erklärt hiermit, dass dieses Gerät mit den grundlegenden Anforderungen und anderen relevanten Bestimmungen der Richtlinie 2014/53/EU übereinstimmt. Der gesamte Text der EU-Konformitätserklärung ist verfügbar unter:
https://www.asus.com/support/

Dichiarazione di conformità UE semplificata

ASUSTek Computer Inc. con la presente dichiara che questo dispositivo è conforme ai requisiti essenziali e alle altre disposizioni pertinenti con la direttiva 2014/53/EU. Il testo completo della dichiarazione di conformità UE è disponibile all'indirizzo: https://www.asus.com/support/

Упрощенное заявление о соответствии европейской директиве

ASUSTek Computer Inc. заявляет, что устройство соответствует основным требованиям и другим соответствующим условиям директивы 2014/53/EU. Полный текст декларации соответствия ЕС доступен на https://www.asus.com/support/

إعلان التوافق المبسط الصادر عن الاتحاد الأوروبي

تقر شركة ASUSTek Computer أن هذا الجهاز يتوافق مع المتطلبات الأساسية والأحكام الأخرى ذات الصلة الخاصة بتوجيه 2014/53/EU. يتوفر النص الكامل لإعلان التوافق الصادر عن الاتحاد الأوروبي على:
https://www.asus.com/support/

Опростена декларация за съответствие на ЕС

С настоящото ASUSTek Computer Inc. декларира, че това устройство е в съответствие със съществените изисквания и другите приложими постановления на свързаната Директива 2014/53/ЕС. Пълният текст на ЕС декларация за съвместимост е достъпен на адрес https://www.asus.com/support/

Declaração de Conformidade UE Simplificada

ASUSTek Computer Inc. declara que este dispositivo está em conformidade com os requisitos essenciais e outras disposições relevantes relacionadas às diretivas 2014/53/UE. O texto completo da declaração de conformidade CE está disponível em
https://www.asus.com/support/

Pojednostavljena EU Izjava o sukladnosti

ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj sukladan s bitnim zahtjevima i ostalim odgovarajućim odredbama direktive 2014/53/EU. Cijeli tekst EU izjave o sukladnosti dostupan je na https://www.asus.com/support/

Zjednodušené prohlášení o shodě EU

Společnost ASUSTek Computer Inc. tímto prohlašuje, že toto zařízení splňuje základní požadavky a další příslušná ustanovení směrnice 2014/53/ EU. Plné znění prohlášení o shodě EU je k dispozici na adrese https://www.asus.com/support/

Forenklet EU-overensstemmelseserklæring

ASUSTeK Computer Inc. erklærer hermed at denne enhed er i overensstemmelse med hovedkravene og øvrige relevante bestemmelser i direktivet 2014/53/EU. Hele EU-overensstemmelseserklæringen kan findes på https://www.asus.com/support/

Vereenvoudigd EU-conformiteitsverklaring

ASUSTeK Computer Inc. verklaart hierbij dat dit apparaat voldoet aan de essentiële vereisten en andere relevante bepalingen van Richtlijn 2014/53/EU. De volledige tekst van de EU-conformiteitsverklaring is beschikbaar op https://www.asus.com/support/

Lihtsustatud EÜ vastavusdeklaratsioon

Käesolevaga kinnitab ASUSTek Computer Inc, et seade vastab direktiivi 2014/53/EÜ olulistele nõuetele ja teistele asjakohastele sätetele. EL vastavusdeklaratsiooni täistekst on saadaval veebisaidil https://www.asus.com/support/

Eurooppa - EY:n vaatimustenmukaisuusvakuutus

ASUSTek Computer Inc. ilmoittaa täten, että tämä laite on direktiivin 2014/53/EU olennaisten vaatimusten ja muiden asiaankuuluvien lisäysten mukainen. Koko EY:n vaatimustenmukaisuusvakuutuksen teksti on luettavissa osoitteessa https://www.asus.com/support/

تبعیت از نسخه ساده شده بیانیه اتحادیه اروپا

ASUSTek Computer Inc در اینجا اعلام می کند که این دستگاه با نیازهای اساسی و سایر مقررات مربوط به بیانیه 2014/53/EU. مطابقت دارد. متن کامل پیروی از این بیانیه اتحادیه اروپا در این آدرس موجود است:
https://www.asus.com/support/ .

Απλοποιημένη Δήλωση Συμμόρφωσης ΕΕ

Διά του παρόντος η ASUSTek Computer Inc. δηλώνει ότι αυτή η συσκευή είναι σύμμορφη με τις βασικές προϋποθέσεις και άλλες σχετικές διατάξεις της Οδηγίας 2014/53/ΕΕ. Το πλήρες κείμενο της δήλωσης συμμόρφωσης της ΕΕ είναι διαθέσιμο στη διεύθυνση
https://www.asus.com/support/

הצהרת תאימות רגולטורית מקוצרת עבור האיחוד אירופי

ASUSTek Computer Inc. מצהירה בזאת כי מכשיר זה תואם לדרישות החיוניות ולשאר הסעיפים הרלוונטיים של תקנה 2014/53/EU. ניתן לקרוא את הנוסח המלא של הצהרת התאימות הרגולטורית עבור האיחוד האירופי בכתובת:
https://www.asus.com/support/

Egyszerűsített EU megfelelőségi nyilatkozat

Az ASUSTek Computer Inc. ezennel kijelenti, hogy ez az eszköz megfelel az 2014/53/EU sz. irányelv alapvető követelményeinek és egyéb vonatkozó rendelkezéseinek. Az EU megfelelőségi nyilatkozat teljes szövegét a következő weboldalon tekintheti meg: https://www.asus.com/support/

Pernyataan Kesesuaian UE yang Disederhanakan

ASUSTeK Computer Inc. dengan ini menyatakan bahwa perangkat ini memenuhi persyaratan utama dan ketentuan relevan lainnya yang terdapat pada Petunjuk 2014/53/EU. Teks lengkap pernyataan kesesuaian EU tersedia di: https://www.asus.com/support/

Vienkāršota ES atbilstības paziņojums

ASUSTeK Computer Inc. ar šo paziņo, ka šī ierīce atbilst Direktīvas 2014/53/ES būtiskajām prasībām un citiem citiem saistošajiem nosacījumiem. Pilns ES atbilstības paziņojuma teksts pieejams šeit: https://www.asus.com/support/

Supaprastinta ES atitikties deklaracija

Šiame dokumente bendrovė „ASUSTek Computer Inc." pareiškia, kad šis prietaisas atitinka pagrindinius reikalavimus ir kitas susijusias Direktyvos 2014/53/ES nuostatas. Visas ES atitikties deklaracijos tekstas pateikiamas čia: https://www.asus.com/support/

Forenklet EU-samsvarserklæring

ASUSTek Computer Inc. erklærer herved at denne enheten er i samsvar med hovedsaklige krav og andre relevante forskrifter i direktivet 2014/53/EU. Fullstendig tekst for EU-samsvarserklæringen finnes på: https://www.asus.com/support/

Uproszczona deklaracja zgodności UE

Firma ASUSTek Computer Inc. niniejszym oświadcza, że urządzenie to jest zgodne z zasadniczymi wymogami i innymi właściwymi postanowieniami dyrektywy 2014/53/EU. Pełny tekst deklaracji zgodności UE jest dostępny pod adresem https://www.asus.com/support/

Declaração de Conformidade Simplificada da UE

A ASUSTek Computer Inc. declara que este dispositivo está em conformidade com os requisitos essenciais e outras disposições relevantes da Diretiva 2014/53/UE. O texto integral da declaração de conformidade da UE está disponível em https://www.asus.com/support/

Declarație de conformitate UE, versiune simplificată

Prin prezenta, ASUSTek Computer Inc. declară că acest dispozitiv este în conformitate cu reglementările esențiale și cu celelalte prevederi relevante ale Directivei 2014/53/UE. Textul complet al declarației de conformitate UE este disponibil la adresa https://www.asus.com/support/

Pojednostavljena Deklaracija o usaglašenosti EU

ASUSTek Computer Inc. ovim izjavljuje da je ovaj uređaj usaglašen sa osnovnim zahtevima i drugim relevantnim odredbama Direktive 2014/53/EU. Ceo tekst Deklaracije o usaglašenosti EU dostupan je na lokaciji https://www.asus.com/support/

Zjednodušené vyhlásenie o zhode platné pre EÚ

Spoločnosť ASUSTek Computer Inc. týmto vyhlasuje, že toto zariadenie je v súlade so základnými požiadavkami a ďalšími príslušnými ustanoveniami smernice č. 2014/53/EÚ. Plné znenie vyhlásenia o zhode pre EÚ je k dispozícii na lokalite https://www.asus.com/support/

Poenostavljena izjava EU o skladnosti

ASUSTek Computer Inc. tukaj izjavlja, da je ta naprava skladna s temeljnimi zahtevami in drugimi relevantnimii določili Direktive 2014/53/EU. Polno besedilo izjave EU o skladnosti je na voljo na https://www.asus.com/support/

Declaración de conformidad simplificada para la UE

Por la presente, ASUSTek Computer Inc. declara que este dispositivo cumple los requisitos básicos y otras disposiciones pertinentes de la directiva 2014/53/EU. En https://www.asus.com/support/ está disponible el texto completo de la declaración de conformidad para la UE.

Förenklad EU-försäkran om överensstämmelse

ASUSTek Computer Inc. deklarerar härmed att denna enhet överensstämmer med de grundläggande kraven och andra relevanta bestämmelser i direktiv 2014/53/EU. Fullständig text av EU-försäkran om överensstämmelse finns på https://www.asus.com/support/

ประกาศเกี่ยวกับความสอดคล้องของสหภาพยุโรปแบบย่อ

ASUSTek Computer Inc. ขอประกาศในที่นี้ว่าอุปกรณ์นี้มีความสอดคล้องกับความ
ต้องการที่จำเป็นและเงื่อนไขที่เกี่ยวข้องอื่น ๆ ของบทบัญญัติข้อกำหนด 2014/53/EU เนื้อหาที่สมบูรณ์ของประกาศความสอดคล้องกับ EU มีอยู่ที่ https://www.asus.com/support/

Basitleştirilmiş AB Uyumluluk Bildirimi

ASUSTek Computer Inc., bu aygıtın 2014/53/EU Yönergesinin temel gereksinimlerine ve diğer ilgili hükümlerine uygun olduğunu bildirir. AB uygunluk bildiriminin tam metni şu adreste bulunabilir: https://www.asus.com/support/

Спрощена декларація про відповідність нормам ЄС

ASUSTek Computer Inc. заявляє, що цей пристрій відповідає основним вимогам та іншим відповідним вимогам Директиви 2014 / 53 / EU. Повний текст декларації відповідності нормам ЄС доступний на https://www.asus.com/support/

CE

CE RED RF Output table (Directive 2014/53/EU)

RTL8822CE output power table:

Function	Frequency	Max Output Power (EIRP)
Wi-Fi	2412-2472 MHz	19 dBm
	5150-5350 MHz	22 dBm
	5470-5725 MHz	22 dBm
Bluetooth	2402-2480 MHz	13 dBm

*** Receiver category 1**

Service and Support

Visit our multi-language website at https://www.asus.com/support/.