

# TINKER SYSTEM 2

Arm SBC with Aluminum Case, Rockchip RK3399 Hexa-core, LPDDR4 RAM, eMMC, HDMI-CEC, 12~19.5V DC-in

## Features

- Fanless design: Great heat conductive with fanless support
- Certified with Regulation: CE, FCC, VCCI, BSMI
- High peripheral extensibility: Reserved I/O for antenna and accessory extension
- 12V~19.5V DC-in offers stable power delivery
- Linux & Android supported



## Specifications

<b>Mechanism</b>	Material	Aluminum
<b>Processor</b>	SoC	Rockchip RK3399
	CPU	2 x Arm® Cortex®-A72 @ 2.0 GHz + 4 x Arm® Cortex®-A53 @ 1.5 GHz
	GPU	Arm® Mali™-T860 MP4 GPU @ 800 MHz
<b>Memory</b>	Technology	Dual-CH LPDDR4 On-board
	Size	2/4GB*
<b>Storage</b>	eMMC	16/32GB*
<b>Ethernet</b>	Speed	10/100/1000Mbps
	Controller	1 x Realtek RTL8211F-CG
<b>Wireless</b>	Speed	802.11 a/b/g/n/ac & Bluetooth 5.0
	Module	1 x Realtek RTL8822CE
	Antenna Connector	2 x I-PEX MHF® 4 (2T2R)
<b>Display</b>	HDMI	1, Supports up to 4096 x 2160 @ 60 Hz (w/ Audio)
	Type-C (DP)	1, Supports DP 1.2 up to 4096 x 2160 @ 60 Hz
	MIPI DSI	1, Supports 4 lane up to 6 Gbps, 1920 x 1080 @ 60 Hz (22-pin)
	Multi Display	HDMI+Type-C, HDMI+MIPI DSI, Type-C+MIPI DSI
<b>Camera</b>	MIPI CSI-2	1, Supports 2 lane up to 3 Gbps (15-pin)
<b>Rear I/O</b>	USB 3.2 Gen1 Type-A	3
	USB 3.2 Gen1 Type-C OTG	1
	Ethernet	1
	HDMI	1
<b>Internal I/O</b>	Recovery Header	1 (2-pin)
	Power-on Header	1 (2-pin)
	Reset Header	1 (2-pin)
	Debug UART Header	1 (2-pin)
	DC Fan Header	1 (2-pin)
	RTC Battery Header	1 (2-pin)
<b>Power</b>	Power Input	12 to 19.5 VDC, barrel jack (5.5/2.5 mm)
<b>Environment</b>	Operating Temperature	0~50°C
	Storage Temperature	-40~85°C
	Relative Humidity	0 to 85% (non-condensing)
<b>Others</b>	Operating System	Linux Debian 10, Android (AOSP) 11
	Dimensions	3.583" x 2.638" x 1.772" (91 x 67 x 45 mm)

\*Specifications by SKU

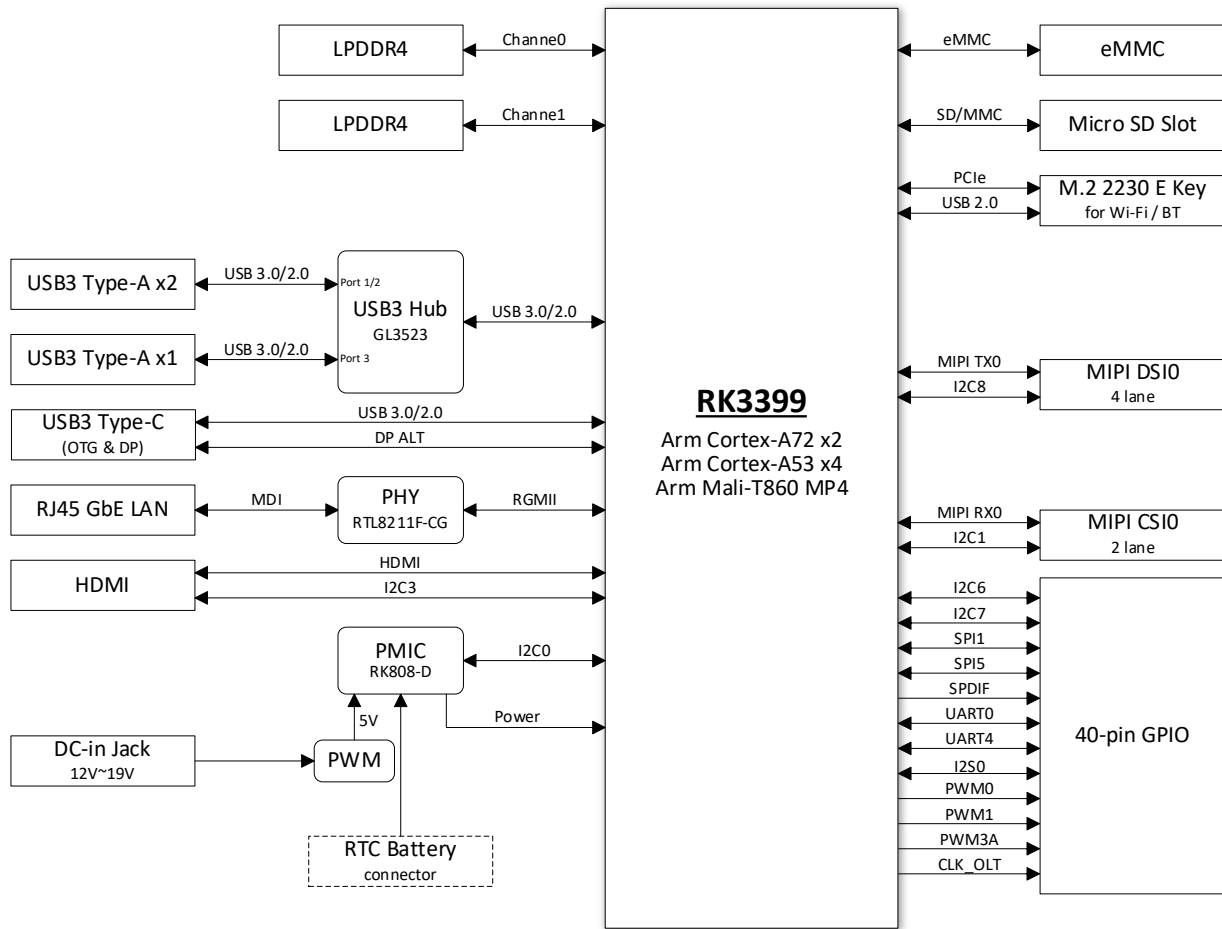
## Ordering Information

PN	Model Name	Description
90AE00U1-M00010	TINKER SYSTEM 2-2G/16G	TB2 BOX/B2/A/0/0/001/0/0/0/0/2/JB/0/0/0/0

## Packing List

Item#	Description
1.	1 x Tinker System 2 (w/ I/O Dust Covers)
2.	2 x Wi-Fi Antennas
3.	1 x Quick Start Guide

## Block Diagram



## Optional Accessories

Item#	Description
45W Adapter	DC 19V/2.37A or 19.5V/2.31A (5.5/2.5mm)
65W Adapter	DC 19V/3.42A or 19.5V/3.33A (5.5/2.5mm)
Power Cord	
VESA Mount kit	
Wall Mount kit	
Din Rail Kit	By Request

\*Accessories will be shipped separately

# Power Adapter 45W

DC 19V/2.37A or 19.5V/2.31A (5.5/2.5mm)

## Ordering Information

PN	Model Name	Description
90AN00D0-M0AAY0	45W ADAPTER/US	United States
90AN00D0-M0BAY0	45W ADAPTER/BR	Brazil
90AN00D0-M0CAY0	45W ADAPTER/CN	China
90AN00D0-M0EAY0	45W ADAPTER/EU	European Union
90AN00D0-M0EAY1	45W ADAPTER/UK	United Kingdom
90AN00D0-M0EAY2	45W ADAPTER/CH	Switzerland
90AN00D0-M0EAY3	45W ADAPTER/ZA	South Africa
90AN00D0-M0EAY4	45W ADAPTER/IL	Israel
90AN00D0-M0IAY0	45W ADAPTER/IN	India
90AN00D0-M0JAY0	45W ADAPTER/JP	Japan
90AN00D0-M0SAY0	45W ADAPTER/AR	Argentina
90AN00D0-M0TAY0	45W ADAPTER/TW	Taiwan
90AN00D0-M0UAY0	45W ADAPTER/HK	Hong Kong
90AN00D0-M0UAY1	45W ADAPTER/AU	Australia
90AN00D0-M0UAY2	45W ADAPTER/KR	Korea

# Power Adapter 65W

DC 19V/3.42A or 19.5V/3.33A (5.5/2.5mm)

## Ordering Information

PN	Model Name	Description
90AN00C0-M0AAY0	65W ADAPTER/US	United States
90AN00C0-M0BAY0	65W ADAPTER/BR	Brazil
90AN00C0-M0CAY0	65W ADAPTER/CN	China
90AN00C0-M0EAY0	65W ADAPTER/EU	European Union
90AN00C0-M0EAY1	65W ADAPTER/UK	United Kingdom
90AN00C0-M0EAY2	65W ADAPTER/CH	Switzerland
90AN00C0-M0EAY3	65W ADAPTER/ZA	South Africa
90AN00C0-M0EAY4	65W ADAPTER/IL	Israel
90AN00C0-M0IAY0	65W ADAPTER/IN	India
90AN00C0-M0JAY0	65W ADAPTER/JP	Japan
90AN00C0-M0SAY0	65W ADAPTER/AR	Argentina
90AN00C0-M0TAY0	65W ADAPTER/TW	Taiwan
90AN00C0-M0UAY0	65W ADAPTER/HK	Hong Kong
90AN00C0-M0UAY1	65W ADAPTER/AU	Australia
90AN00C0-M0UAY2	65W ADAPTER/KR	Korea

### Rich configurations, multi-platform APIs, flexible framework for smart edge

ASUS has created OmniEdge middleware to simplify application development and offer exclusive services with ASUS IoT platforms.

OmniEdge provides rich and stable Application Programming Interface (API) functions with modular design and multi-OS consideration. System integrators and customers can easily leverage the API to connect to peripherals, make best use of hardware capabilities. OmniEdge API is backward compatible on multi-OS platforms. It takes minimal effort to upgrade or migrate existing application to a new hardware platform.

For no-code low-code system integrators and customers, OmniEdge provides series of configuration tools and scripts, to protect and configure systems while integrating solutions. Customers can easily configure hardware monitors, connectivity, thermal protection, system throttling, and brightness levels...etc.

OmniEdge delivers an SDK of tools, scripts, libraries, and flexible application framework, to assist customers to accelerate application development and solution integration.

## HIGHLIGHTS

<b>Configuration</b>	<b>APIs</b>	<b>IOT Framework</b>	<b>Connectivity</b>	<b>Monitor &amp; Protect</b>	<b>IoT Protocols</b>
Shell scripts (CLI) Tinker config tools, x86 IPC tools	EAPI compliant ASUS extended API for full control Cross platforms (Windows, Linux, Android)	Quick response time Local decision Automation by multiple data sources Reliability under intermittent network	LTE keep alive & auto recover Automatic backup between networks	Watchdog timer Thermal protect customization Fan control Power on/off scheduling	MQTT Modbus, BACNET

## DELIVERABLES (SDK)

Category	A (x86)	B (Tinker Series)	C (ARM IPC)
Windows	1. API library, header files, sample code 2. API Programming Guide 3. Driver (32 bit and 64 bit)	N/A	N/A
Linux	By request	1. API library, header files, sample code 2. API Programming Guide 3. Connectivity Manager User Manual	1. API library, header files, sample code 2. API Programming Guide 3. Connectivity Manager User Manual
Android	N/A	1. API library, sample code 2. API Programming Guide	N/A

# OmniEdge API

## DATASHEET



Features	Functions <sup>(2)</sup>	Category A		Category B		Category C
		Windows	Linux	Linux	Android	Linux
Operation & Protection	Hardware monitor API	V				
	Thermal protect API	V				
	Fan control API <sup>(3)</sup>	V				
	Scheduled Power on/off API <sup>(3)</sup>	V				
	Watchdog timer API	V		V <sup>(4)</sup>		V
Peripheral	GPIO API	V		V <sup>(4)</sup>	V <sup>(5)</sup>	V
	I2C API			V <sup>(4)</sup>	V <sup>(5)</sup>	V
	SPI API				V <sup>(5)</sup>	
	UART API				V <sup>(5)</sup>	
	PWM API				V <sup>(5)</sup>	
Connectivity	Connection auto-recover			V <sup>(4)</sup>	O <sup>(6)</sup>	V
	High availability network			V <sup>(4)</sup>	O <sup>(6)</sup>	V
IoT framework	Cloud/on-prem adapter				x	V
	IOT gateway framework & services				x	V
	Protocols (MQTT, Modbus, REST)				x	V

Category	A (x86)	B (Tinker Series)	C (ARM IPC)
Models <sup>(1)</sup>	E395S-IM-AA H110M-IM-A H310I-IM-A R3.0 H610M-IM-A J3455T-IM-A J3455T-IM-A R2.0 J6412T-IM-A N3350T-IM-A N420S-IM-AA N4200T-IM-A N5105I-IM-A R2.0 Q370I-IM-A Q370I-IM-A R2.0 Q470EI-IM-A Q470EA-IM-A Q470EI-IM-A R3.0 Q670EI-IM-A (SHINE) R680EI-IM-A(SKY) W480E-IM-A R3.0 W480EI-IM-A	Tinker Board 2 Tinker Board 2S Tinker Edge R Tinker System 2	PE100A

1. Not listed models can be supported by request
2. Not checked features can be supported by request
3. Some models may not support this function. Please refer API document
4. Available on Tinker Edge R. Further models by request
5. Available on Tinker 2. Further models by request
6. Native support by Android