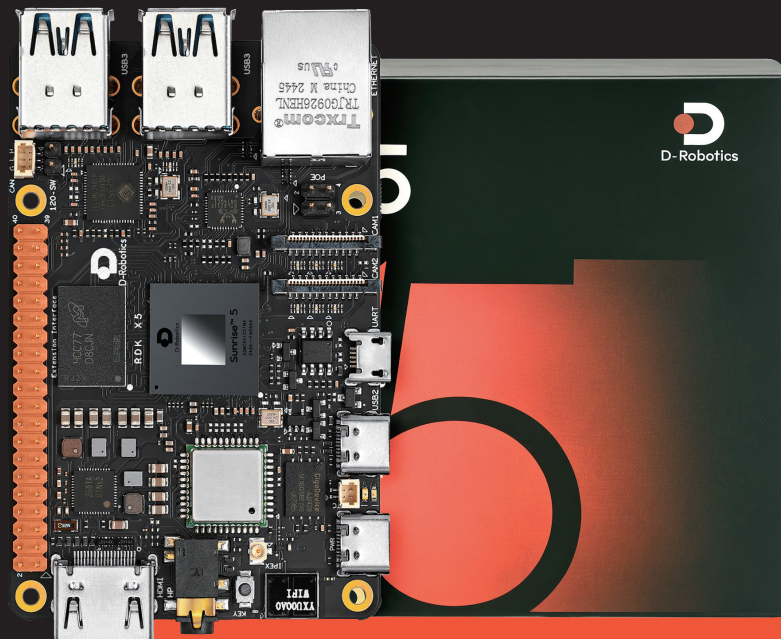




D-Robotics

RDK X5

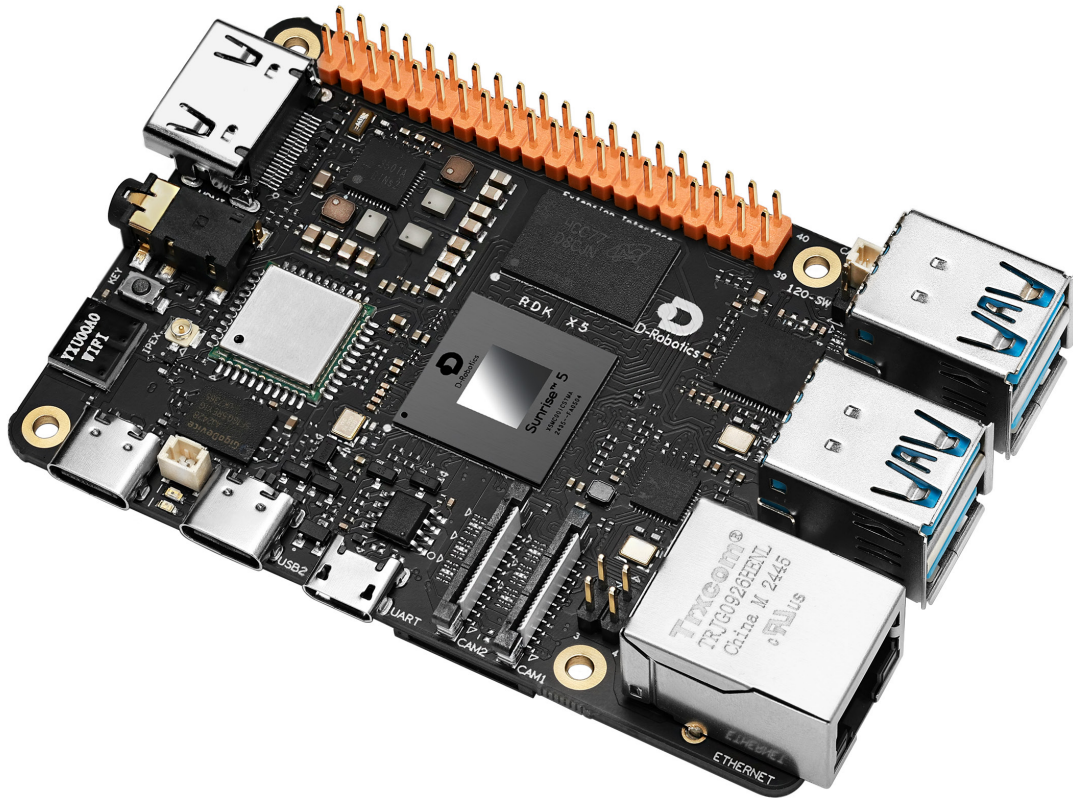


V1.1
2025-05

D-ROBOTICS HOLDING LIMITED

D-Robotics RDK X5

The D-Robotics RDK™ X5 is powered by the D-Robotics Sunrise™ 5 intelligent computing chip, delivering up to 10 TOPS of AI performance. It is an all-in-one development kit designed for intelligent computing and robotics applications. With rich I/O and exceptional usability, it supports complex models and cutting-edge algorithms such as Transformer, RWKV, Occupancy, and Stereo Perception, enabling rapid deployment of AI-driven applications.



OVERVIEW

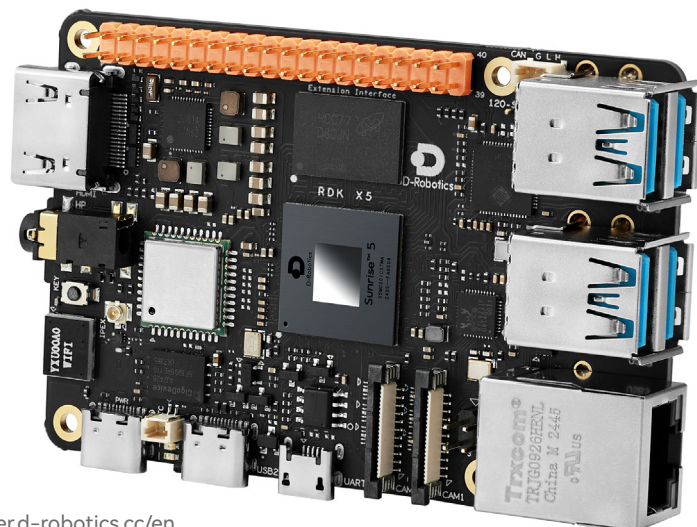
The RDK X5 Robotics Developer Kit features an octa-core Arm® Cortex®-A55 processor, a 10 TOPS BPU, and a 32 GFLOPS GPU, with up to 8GB LPDDR4 memory. Key I/O interfaces include HDMI, Ethernet, USB 3.0, USB 2.0, 4-lane MIPI CSI, 4-lane MIPI DSI, 3.5mm audio jack, CAN, and TF card slot.

The RDK X5 offers dual-band 2.4/5GHz wireless LAN, supporting Wi-Fi 6 and Bluetooth 5.4. It includes a high-performance onboard antenna and supports optional external antenna kits for robust wireless connectivity, reducing development and testing costs.

RAM options include 4GB and 8GB configurations.

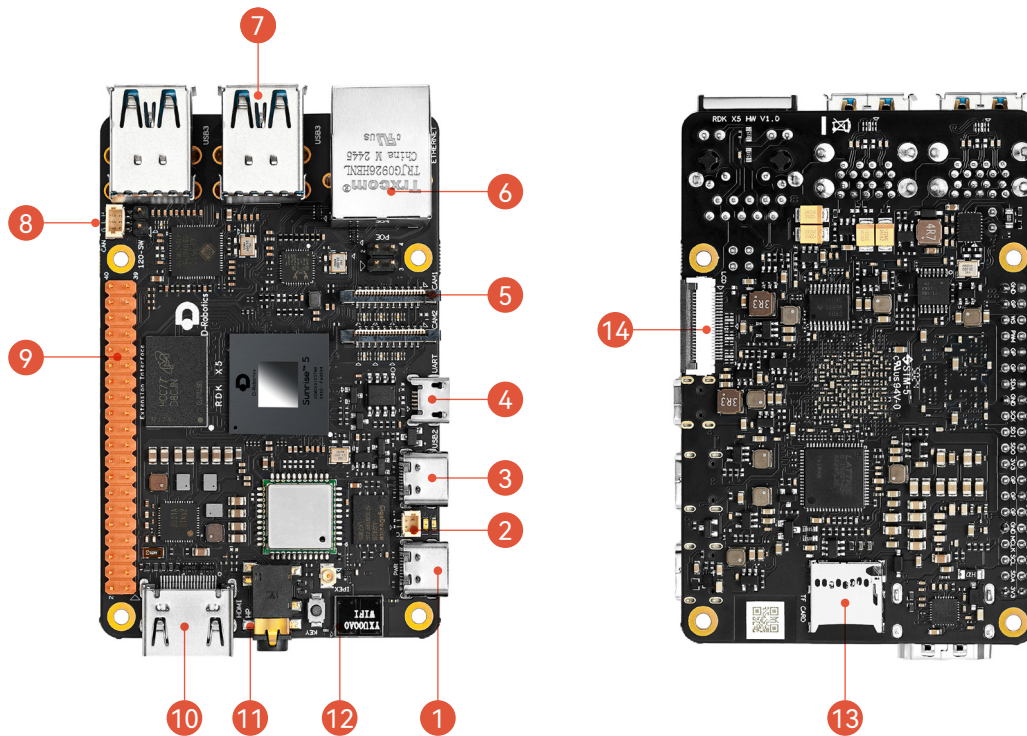
SPECIFICATIONS

Dimensions	85 x 56 x 20 mm	
Processor	CPU	8x1.5GHz Arm® Cortex®-A55
	BPU	1xBayes BPU with 10 TOPS (INT8)
	GPU	1xGPU with 32 GFLOPS performance
Memory	LPDDR4, Configurations: 4GB or 8GB	
Storage	Onboard 1 Gbit NAND flash	
	microSD card slot supporting UHS-I mode	
Display Interfaces	1x4-lane MIPI DSI (compliant with MIPI DSI v1.2)	
	1xHDMI Type-A (up to 1080p@60fps)	
I/O Interfaces	4xUSB 3.0 Type-A (host)	
	1xUSB 2.0 Type-C (device)	
	1xUSB 2.0 Micro-B (UART debug)	
	1xCAN FD interface	
	28 x GPIOs (3.3V) supporting: SPI , I ² C , I ² S , PWM , UART	
Camera Interfaces	2x4-lane MIPI CSI (compliant with MIPI CSI-2 v2.1)	
Audio	3.5mm stereo audio jack (input/output)	
	Cadence® HiFi 5 Audio DSP: Voice wake-up support , PDM and I ² S multichannel processing , Low-power voice operation capability	
Networking	1xRJ45 Ethernet port: Supports 10/100/1000 Mbps , Supports Power over Ethernet (PoE)	
	Wireless: Dual-band 2.4/5GHz WLAN (IEEE 802.11ax / Wi-Fi 6), Bluetooth® 5.4, Onboard high-performance antenna, IPEX connector for external antenna	
Power Supply	5V / 5A DC input via Type-C connector	
	Provides 5V and 3.3V output for external components	
Operating Temperature	-20° C to +60° C	



For detailed specifications, please visit : <https://developer.d-robotics.cc/en>

SPECIFICATIONS



No.	Function	No.	Function	No.	Function
1	Power Supply (USB Type-C)	2	RTC Battery	3	QuickLink (USB Type-C)
4	Debug Serial Port (Micro USB)	5	Dual MIPI Camera	6	Gigabit Ethernet Port, supports PoE
7	4 × USB 3.0 Type-A Ports	8	CAN FD High-Speed	9	40-Pin Header
10	HDMI Display	11	Multi-standard Compatible Headphone Jack	12	Onboard Wi-Fi Antenna
13	TF Card Slot (bottom side)	14	LCD Display (MIPI DSI)		

Specification & Model

Part Number	RAM Capacity
RDK X5 4G	4GB
RDK X5 8G	8GB

WARNINGS

- Ensure external power supplies meet local regulatory standards.
- Operate in a well-ventilated environment. Proper thermal management is required when used in enclosed spaces.
- Place the device on a stable, flat, non-conductive surface during operation.
- Damage caused by incompatible external devices will not be covered under warranty.
- All peripherals used with the RDK X5 must comply with local safety and performance standards, including but not limited to keyboards, displays, and mice.
- Peripheral cables and connectors must be adequately insulated to meet relevant safety standards.

SAFETY INSTRUCTIONS

To Avoid Malfunction Or Damage:

- Do not expose the device to water, moisture, or conductive surfaces during operation.
- Do not place the device near any external heat sources. The RDK X5 is designed for reliable operation under standard environmental temperatures.
- During assembly, avoid mechanical or electrical stress on the PCB and connectors.
- When powered, avoid touching the PCB or board edges to prevent electrostatic discharge (ESD) damage.





<https://developer.d-robotics.cc>