D-Robotics

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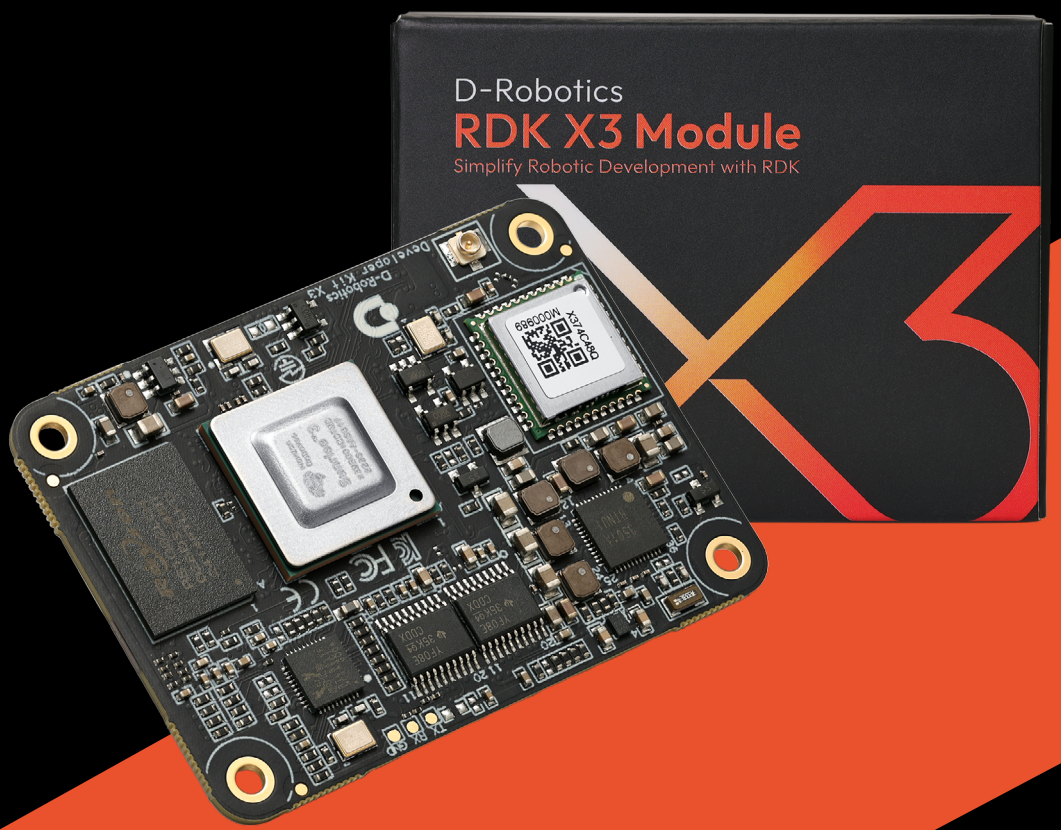
RDK X3 Module



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D-ROBOTICS HOLDING LIMITED

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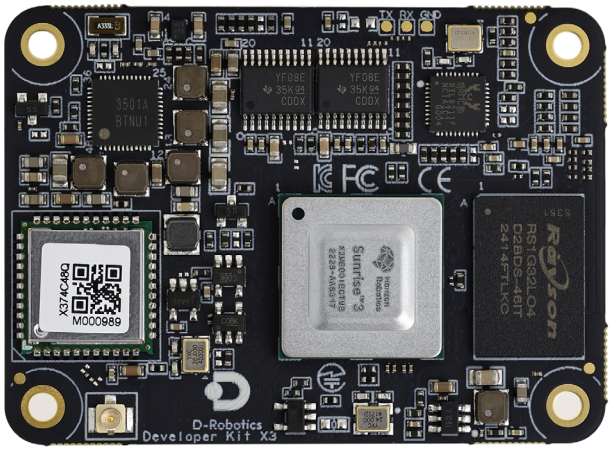
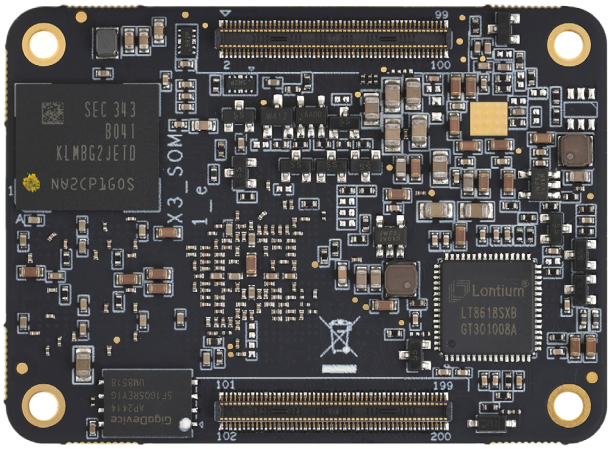
D-Robotics RDK X3 Module





The RDK X3 Module is powered by the Diguwa Sunrise® 3 series high-performance AI SoC, delivering strong general-purpose computing and edge AI capabilities. Its hardware is compatible with the Raspberry Pi CM4 form factor, enabling fast integration and streamlined productization.

BRIEF

Key features of the RDK X3 Module include:

- Quad-core ARM Cortex®-A53 processor
- Up to 5 TOPS of AI performance
- Up to 4GB of LPDDR4 memory
- 4K@60fps video encoding and decoding support

The module offers a rich set of interfaces, including HDMI, Gigabit Ethernet, USB 3.0, MIPI CSI, and MIPI DSI, making it suitable for a wide range of applications. Select models are equipped with dual-band (2.4GHz / 5.0GHz) Wi-Fi and Bluetooth 4.2 modules. When used with external antenna kits, the module provides reliable wireless connectivity, helping reduce development and testing costs while accelerating time-to-market.

Available configurations include 2GB or 4GB of onboard RAM, and eMMC storage options of 16GB, 32GB, or 64GB to meet various performance and budget requirements.

SPECIFICATIONS

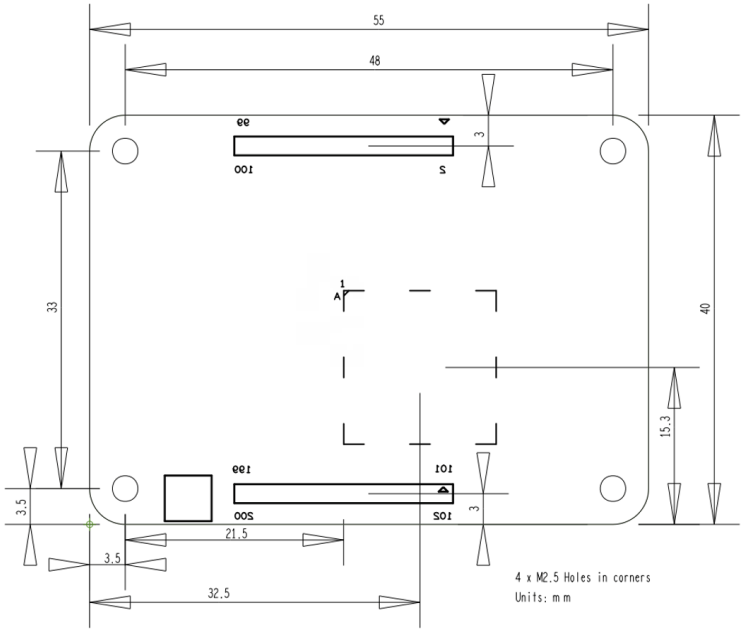
Size	55 mm x 40 mm
CPU	Quad-core Arm® Cortex®-A53 64-bit @ 1.5GHz
BPU	Equivalent to 5 TOPS
Memory	2GB or 4GB LPDDR4
Storage	Optional — NA, 16GB, 32GB, 64GB
Peripheral Interfaces	Optional onboard 2.4 GHz and 5 GHz IEEE 802.11a/b/g/n/ac WLAN, Bluetooth 4.2 module with external antenna support
	1 x Gigabit Ethernet PHY
	1 x USB 3.0 port
	32 GPIOs
	1 x Micro SD card slot
Imaging	1 x 4-lane MIPI CSI interface
	2 x 2-lane MIPI CSI interfaces
Display	1 x HDMI port, up to 1080p60
	1 x MIPI DSI port, up to 1080p60
Multimedia	Supports H.265 / H.264 encoding and decoding, up to 4K@60fps
	Supports MJPEG encoding and decoding
Power Input	5V/3A DC
Operating Temperature	0 to 65℃ (up to 70° C without Wi-Fi module)
Lifecycle	In mass production at least until 2030

Specification & Model

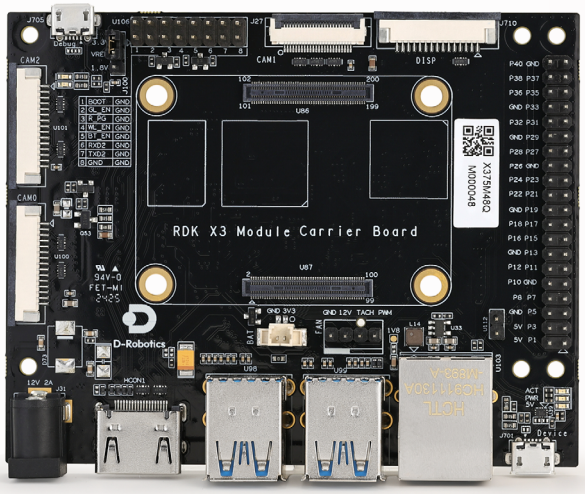
Part Number	Wireless	RAM	eMMC
RDK X3 MD 002016	N	2GB	16GB
RDK X3 MD 102016	Y	2GB	16GB
RDK X3 MD 002032	N	2GB	32GB
RDK X3 MD 102032	Y	2GB	32GB
RDK X3 MD 004032	N	4GB	32GB
RDK X3 MD 104032	Y	4GB	32GB
RDK X3 MD 004064	N	4GB	64GB
RDK X3 MD 104064	Y	4GB	64GB

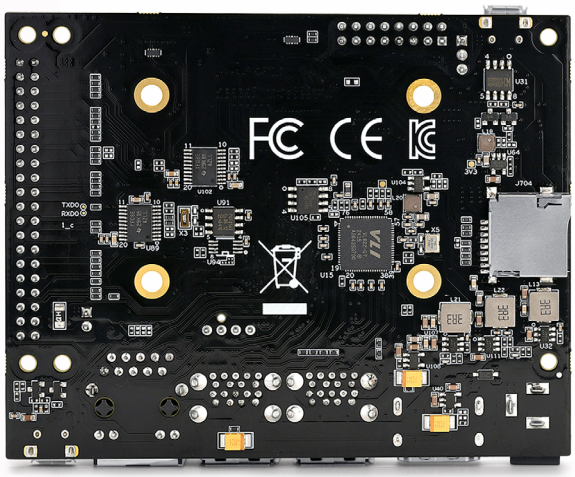
For detailed specifications, please visit : https://developer.d-robotics.cc/en

Dimension

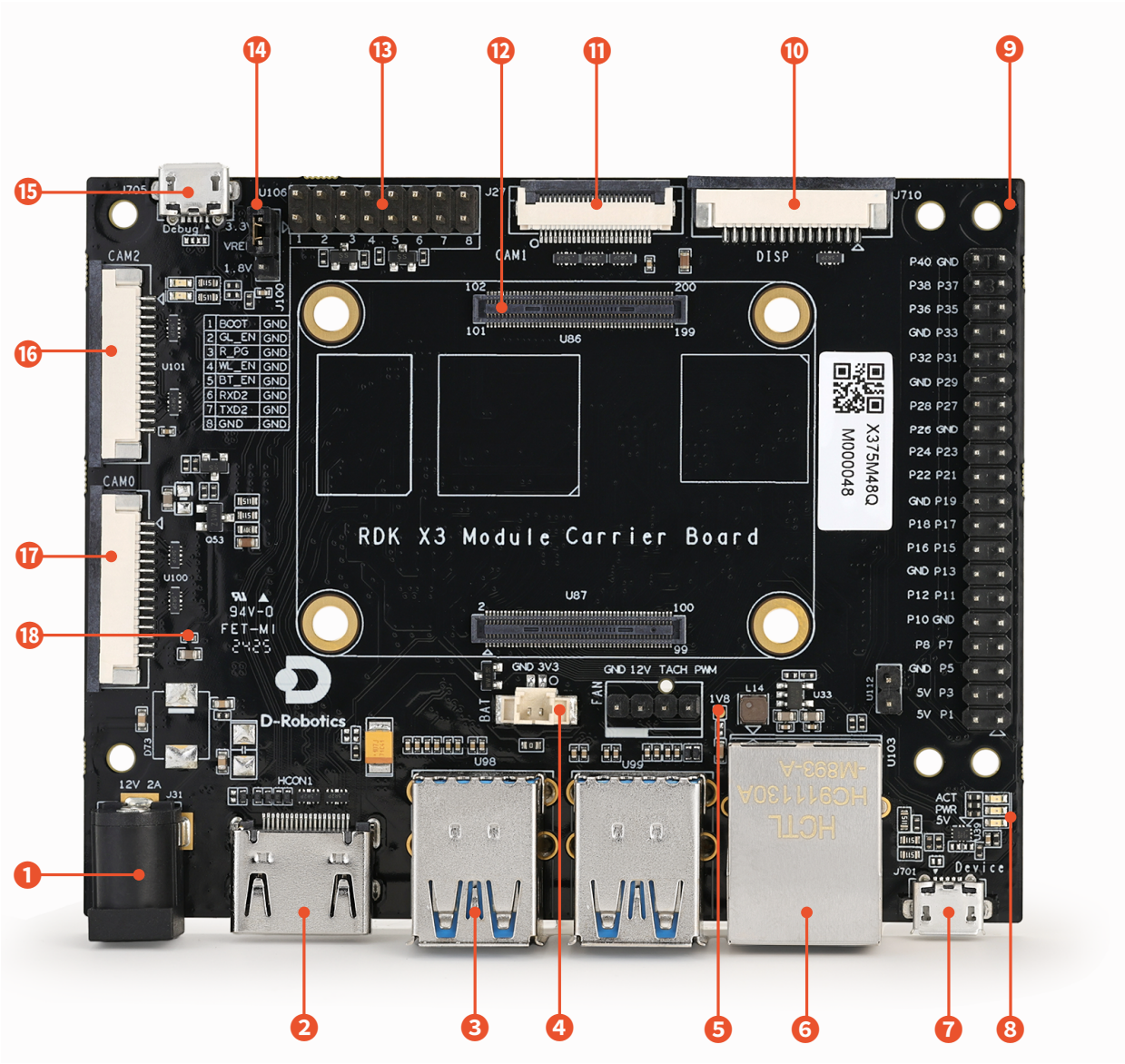


D-Robotics RDK X3 Module Carrier Board





The RDK X3 Module Carrier Board provides developers with an efficient and convenient development platform. It exposes the main peripheral interfaces of the compute module, enabling functional validation, software development, and prototyping. Additionally, it serves as a reference design to accelerate customer product development and deployment.



No.	Interface Function	No.	Interface Function	No.	Interface Function
1	Power Connector	7	Micro USB 2.0 Device Port	13	Function Control IO Header
2	HDMI Interface	8	Work Indicator Light	14	IO Level Selection Header
3	USB 3.0 Host Port	9	40-pin Header	15	Debug Port, USB-to-Serial Port
4	RTC Battery Connector	10	MIPI DSI Interface	16	CAM2 Interface, 2-lane
5	Fan Connector	11	CAM1 Interface, 4-lane	17	CAM0 Interface, 2-lane
6	Gigabit Ethernet Port	12	Core Module Connector	18	Micro SD Card Slot (Back)

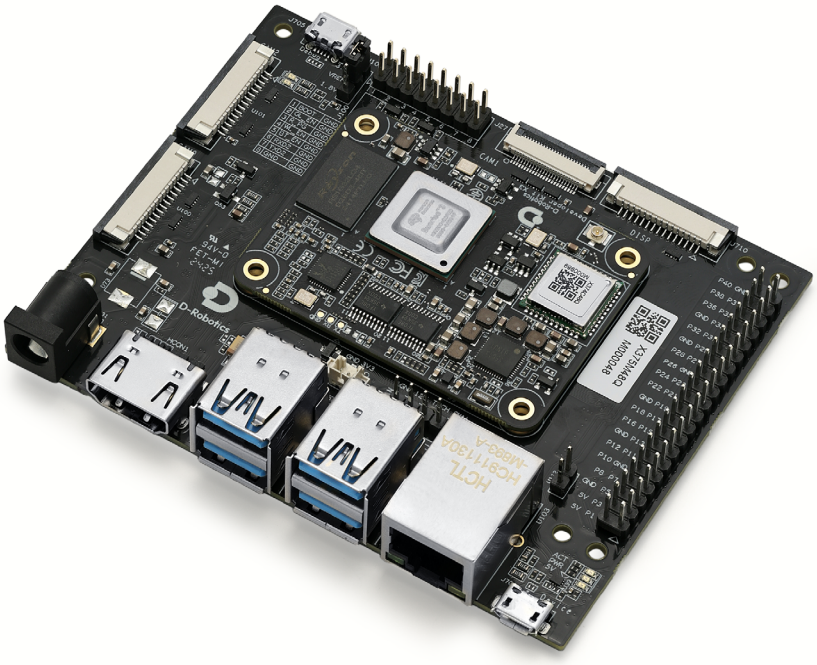
WARNINGS

- When using an external power supply with the RDK X3 Module, ensure that it complies with regional safety regulations and standards.
- Operate the product in a well-ventilated environment. If used in an enclosed space, adequate thermal management must be provided.
- Place the device on a stable, flat, and non-conductive surface during operation.
- Damage caused by connecting incompatible devices is not covered under warranty.
- All peripheral devices used with the RDK X3 Module (including but not limited to keyboards, displays, and mice) must comply with the applicable national standards and certifications to ensure safety and performance.
- All cables and connectors used with peripheral devices must be properly insulated to meet safety requirements.

SAFETY INSTRUCTIONS

To Avoid Malfunction Or Damage:

- Do not expose the device to moisture or place it on conductive surfaces during operation.
- Keep the device away from heat sources; the RDK X3 Module is designed to operate reliably under standard room temperature conditions.
- During assembly, avoid applying mechanical or electrical stress to the PCB and connectors.
- Avoid touching the PCB or device edges while powered on to minimize the risk of electrostatic discharge (ESD) damage.



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