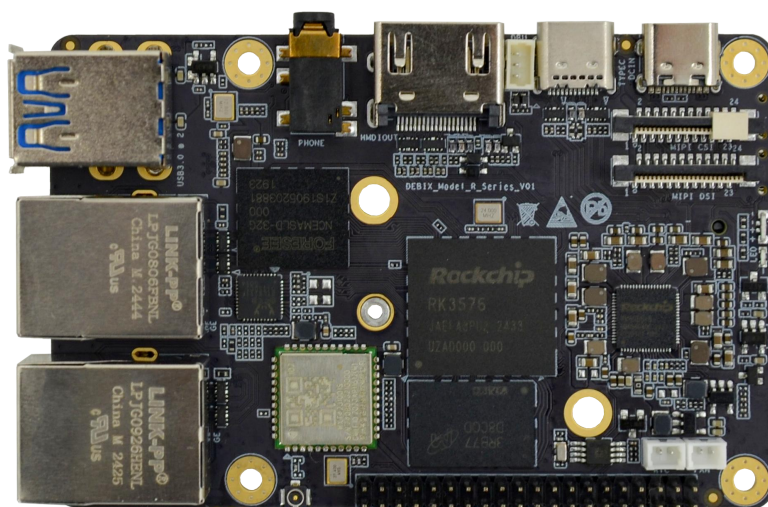# DEBIX R3576-01

DEBIX R3576-01 Single Board Computer

Overview：

The DEBIX R3576-01 is a commercial-grade single-board computer based on the Rockchip RK3576, which provides comprehensive system software development and rich and scalable I/O interfaces for rapid application in intelligent robotics, edge computing, internet of Things and security.

Main Features：

• **Powerful Performance:** Built for demanding commercial or consumer applications, DEBIX R3576-01 is equipped with an octa-core CPU architecture up to 2.2GHz, combining a quad-core ARM Cortex-A72 cluster and a quad-core ARM Cortex-A53 cluster, and with 2GB/4GB/8GB LPDDR4 RAM. This combination ensures smooth operation even for complex processing tasks.

• **Commercial-grade Build:** Designed for harsh environments, DEBIX R3576-01 features commercial-grade components and a wide CPU temperature range of 0°C to 70°C.

• **Rich Connectivity:** DEBIX R3576-01 offers a comprehensive range of connectivity options,including Gigabit Ethernet, 2.4GHz & 5GHz Wi-Fi 6, Bluetooth 5.4, high-speed USB 3.0, and PCIe support. This allows for easy connection and control of various peripherals.

Specification：

System	
CPU	Rockchip RK3576, 4 x Cortex-A72+4 x Cortex-A53 up to 2.2GHz, comes with an integrated neural processing unit (NPU) that delivers up to 6 TOPS (RKNN), and with GPU G52 MC3
Memory	2GB LPDDR4 (4GB/8GB optional)
Storage	1) Default: Onboard 32GB eMMC (8GB/16GB/64GB/128GB/256GB optional) 2) Micro SD card 8GB/16GB/32GB/64GB/128GB/256GB optional
OS	Android 14, Debian 12
Boot Mode	Boot from eMMC
Communication	
Gigabit Network	2 x Gigabit Ethernet Interfaces: 1) 1 x RJ45 with PoE power supply (needs PoE power supply module) 2) 1 x RJ45
Wi-Fi & BT	2.4GHz & 5GHz Wi-Fi 6, BT 5.4, external Wi-Fi SMA antenna connector
Video & Audio	
HDMI	1 x HDMI output with Type-A HDMI female
MIPI CSI	1 x MIPI CSI, supports 4-lane, 24Pin 0.5mm Pitch FPC socket
MIPI DSI	1 x MIPI DSI, supports 4-lane, 24Pin 0.5mm Pitch FPC socket
Audio	1 x 3.5mm headphone and microphone combo port
DP	1 x DP display supports MST with Type-C
I/O Interfaces	
USB	2 x USB 3.0 Host with double layer Type-A 1 x USB 2.0 PWR with Type-C for DC 5V power input 1 x USB 3.0 OTG + DP DISPLAY supports MST with Type-C
M.2	1 x PCIe, M.2 M-KEY 2242 (B-KEY optional)
40-Pin Double-Row Header	1) Default: 3 x UART, 2 x SPI, 2 x I2C, 2 x CAN, 6 x GPIO, refer to DEBIX website "DEBIX Model A GPIO Pin Multiplexing Function List", which can be configured to I2S, PWM, SPDIF, GPIO, etc. via software 2)5V power supply, system reset, ON/OFF
Debug	1 x Debug, 1*3Pin/1.25mm wafer connector
RTC	1 x RTC, 1*2Pin/1.25mm wafer connector
FAN	1 x FAN, 1*2Pin/1.25mm wafer connector
Slot	1 x Micro SD card slot

Specification: (Continued)

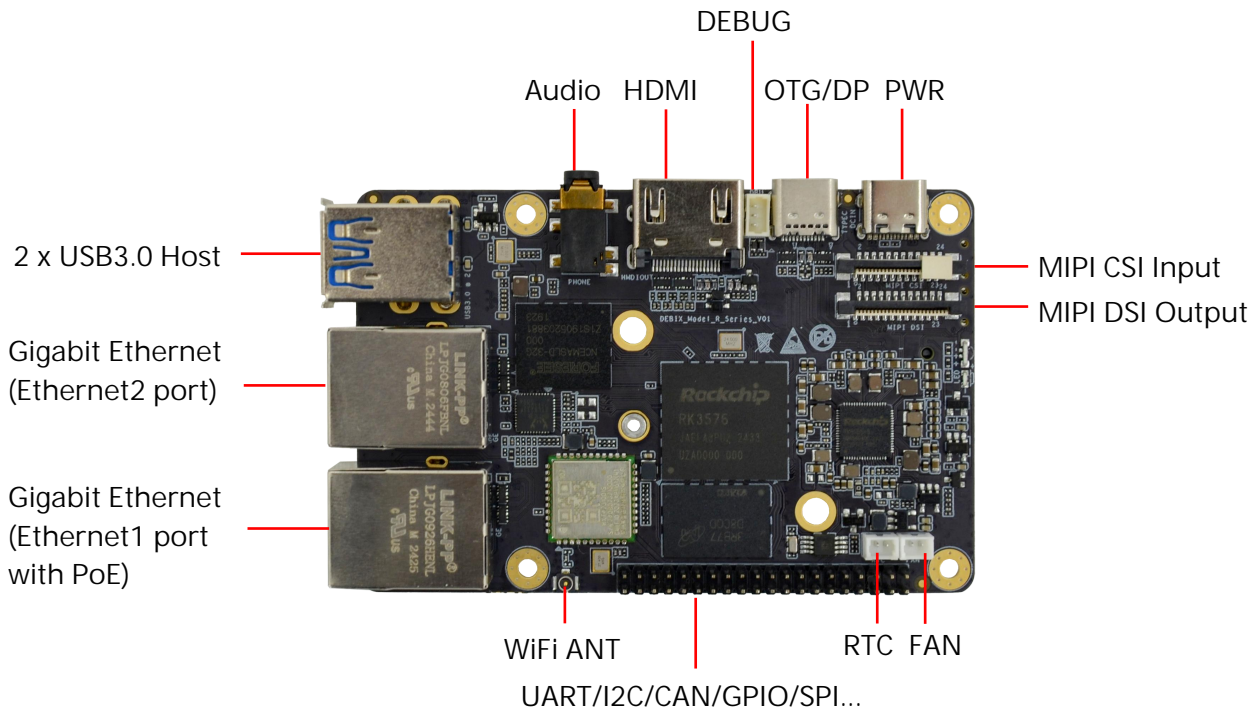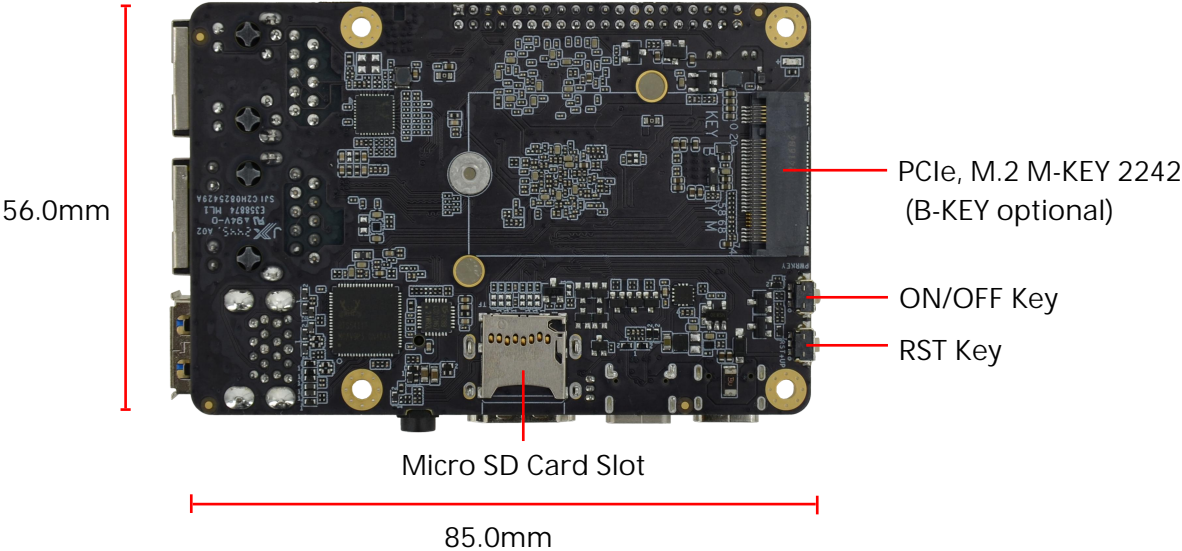| PowerSupply	
Power Input	Default DC 5V/3A power input with Type-C interface
Mechanical & Environmental	
Size (L x W)	85.0mm x 56.0mm (±0.5mm)
Net Weight	48g (±0.5g)
Operating Temp.	0°C ~ 70°C

Certificates:

I/O Interface:

I/O Interface: (continued)

56.0mm

85.0mm

PCIe, M.2 M-KEY 2242
(B-KEY optional)

ON/OFF Key

RST Key

Micro SD Card Slot
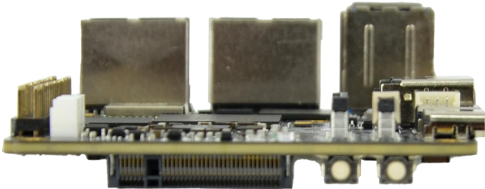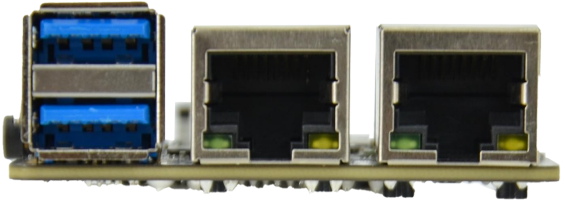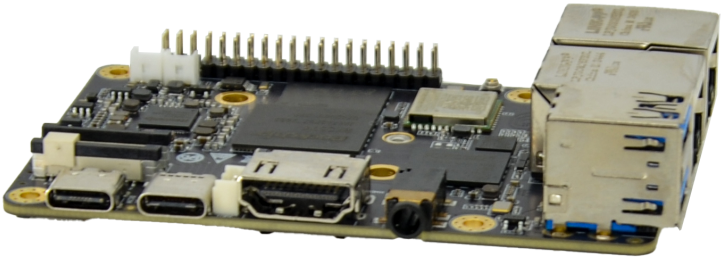
Compatible with DEBIX's Accessories:

Product	Model
DEBIX Fanless Aluminum Enclosure	EMC-7090B R3576-01
I/O Board	EMB-AS-E01
LoRa Board	EMB-AS-03
SBC POE Board	EMB-AS-06
DEBIX Camera Module	Camera 200A Camera 500A Camera 1300A
DEBIX Display Screen	DEBIX TD050H DEBIX TD070H DEBIX TD101H

Safety Instruction and Warnings

General

· Avoid exposure to water, moisture, and conductive surfaces while operating.

· Handle with care to avoid mechanical or electrical damage to the circuit board and connectors.

· Only handle the board by the edges when powered on to minimize the risk of electrostatic discharge damage.

Power

· Use only a 5V/3A DC minimum external power supply that complies with relevant regulations and standards for your country.

Environment:

· Operate in a well-ventilated environment, even if using a case.

· Place on a stable, flat, non-conductive surface and avoid contact with conductive items.

Connections

· Only connect compatible devices to the GPIO ports to avoid damage and warranty voiding.

· Use peripherals that comply with relevant standards for the country of use and ensure proper insulation and operation.

Additional notes

· This summary is not exhaustive, please refer to the full User Manual for details.

· If you are unsure about any aspect of safety or operation, consult a qualified professional.

Contact Us:

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