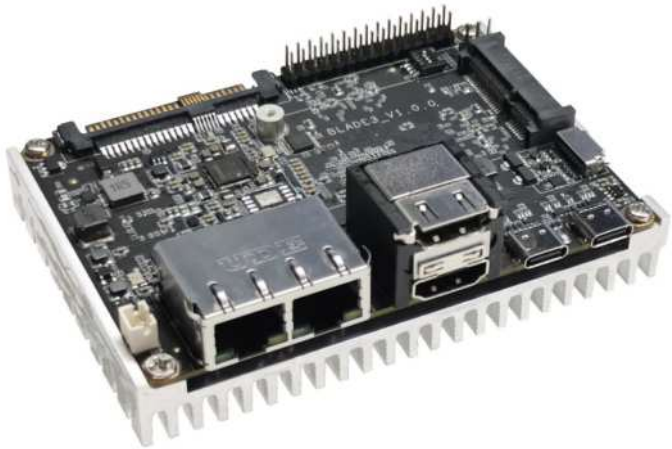
Blade 3

Internet of Things SBC

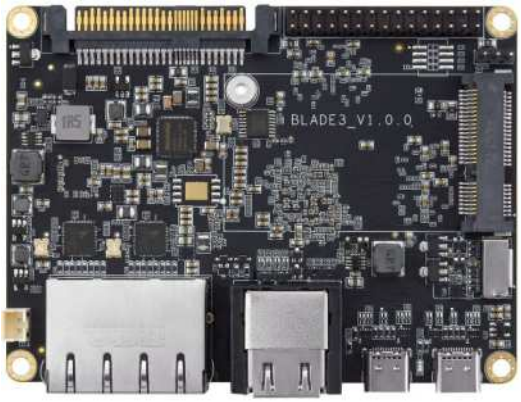
MIXTILE

High-Performance Stackable Single Board Computing Unit

Mixtile Blade 3 is a low-cost, low-power SBC based on the next-generation, 8 nm Rockchip RK3588 CPU. It is ideal for quick development, AI-application prototyping, and edge computing, and it allows you to extend your deployment by clustering several Mixtile Blade 3 SBCs. It also features a 4-lane PCIe Gen3 port for communicating with other processing nodes, allowing for high-performance computing with minimal carbon footprint.



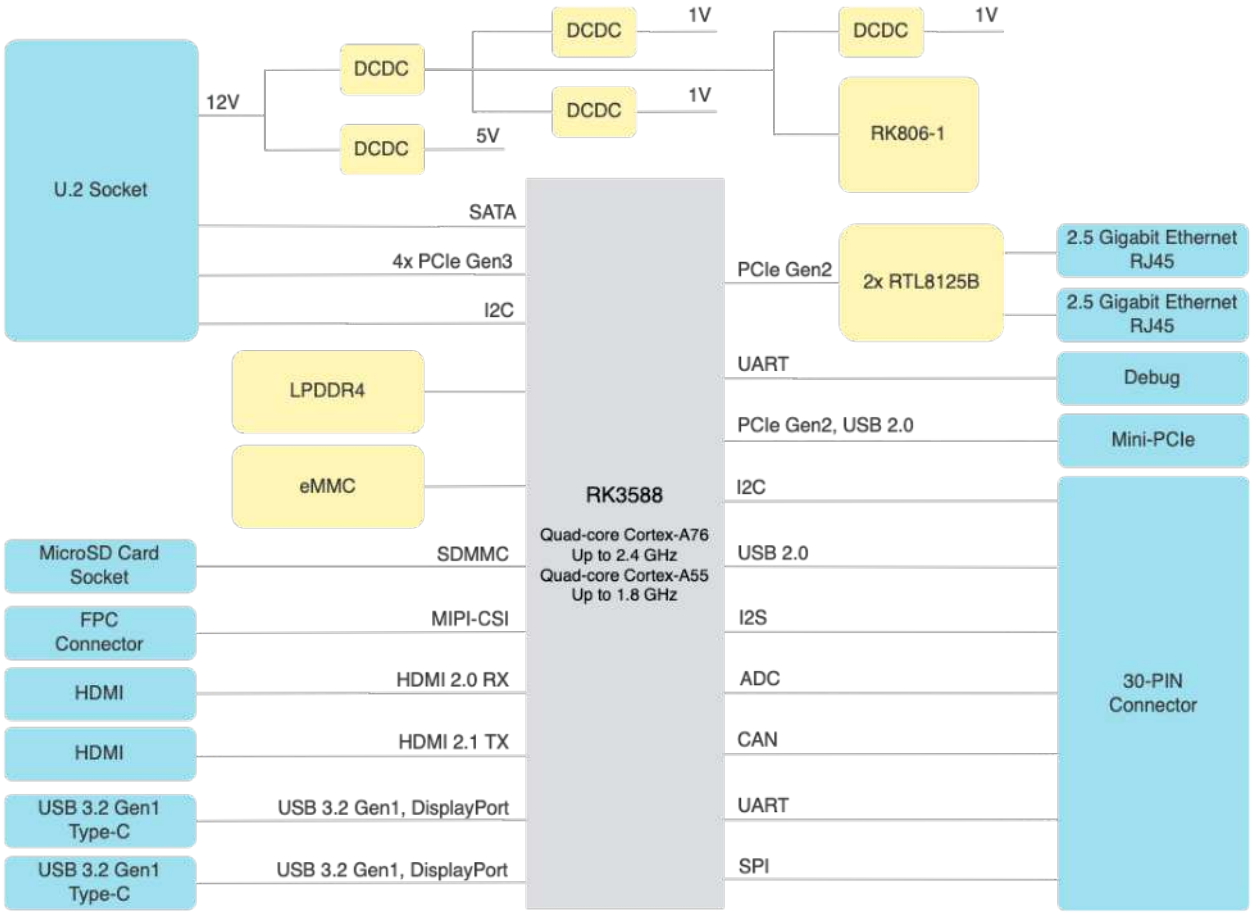
Main Features



- **CPU:** Rockchip Octa-core Cortex-A76/A55 SoC processor RK3588
- **NPU:** Up to 6 TOPS
- **Memory:**
  - Up to 32 GB LPDDR4 memory, up to 256 GB eMMC storage
- **HDMI interface:**
  - HDMI 2.1 output (8K @ 60 FPS or 4K @ 120 FPS)
  - HDMI 2.0 input (4K @ 60 FPS)
- **Video encoder:** H.264/H.265 video encoder up to 8K @ 30 FPS
- **Video decoder:** H.265/H.264/VP9 video decoder up to 8K @ 60 FPS
- **Camera Input:** 4-lane MIPI-CSI
- **PCIe expansion:** Mini-PCIe socket with PCIe Gen 2.1, USB 2.0 support
- **Storage expansion:**
  - 4-lane PCIe Gen 3 in U.2 port
  - SATA 3.0 in U.2 port, Micro-SD 3.0 flash socket
- **Ethernet expansion:** Dual 2.5 gigabit Ethernet ports
- **USB:** Dual USB 3.2 Gen 1 Type-C ports, DisplayPort 1.4 A
- **GPIOs:** 40-pin GPIO socket
  - Digital I/O, I²C, USB 2.0, TTL UART, SPI, I²S
- **Software support:** Preload customized Debian 11
  - Support other Linux distributions and Android 12
- **Power:** USB Type-C port-1 support USB PD 2.0 protocol
  - (Optional: 12 V DC standard SATA power in via U.2 port)
- **Dimensions:** 2.5-inch Pico-ITX form factor, 100 x 72 mm



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Blade 3 Block Diagram

Electrical

- Input Voltage:
  - 5 to 20VDC PD via Type-C*
  - 12V DC SATA power via U.2 port

*Power charger must support PD2.0/PD3.0 protocol, could only use USB-C to USB-C cable for PD2.0/PD3.0 protocol.

- Output Voltage:
  - 5VDC
- Operating Current:
  - Maximum 3A @ 20VDC

Mechanical

- PCBA Dimensions: 100 x 72 mm (Pico-ITX)

Environmental

- Operating Parameters
  - Temperature: 0 to +80°C

Development kit

- MIXTILE Blade 3
- Android 12 and Linux Debian Support Packages

Connectors & Pin Assignments

- Debug
- 30-Pin Connector
- Mini-PCIe
- U.2
- MIPI-CSI

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