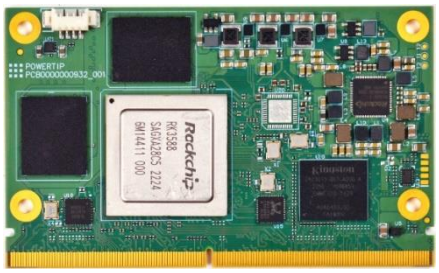
P05D00109-00

Rockchip RK3588

Front View



Features

- Rockchip RK3588 octa-core CPU (Cortex-A76 + A55)
- 6 TOPS NPU for real-time edge AI
- 8K@60 decode / 8K@30 encode (H.265/VP9/H.264)
- Rich I/O: USB, SDIO, audio, video in/out
- Fast, stable networking for industrial and AI systems

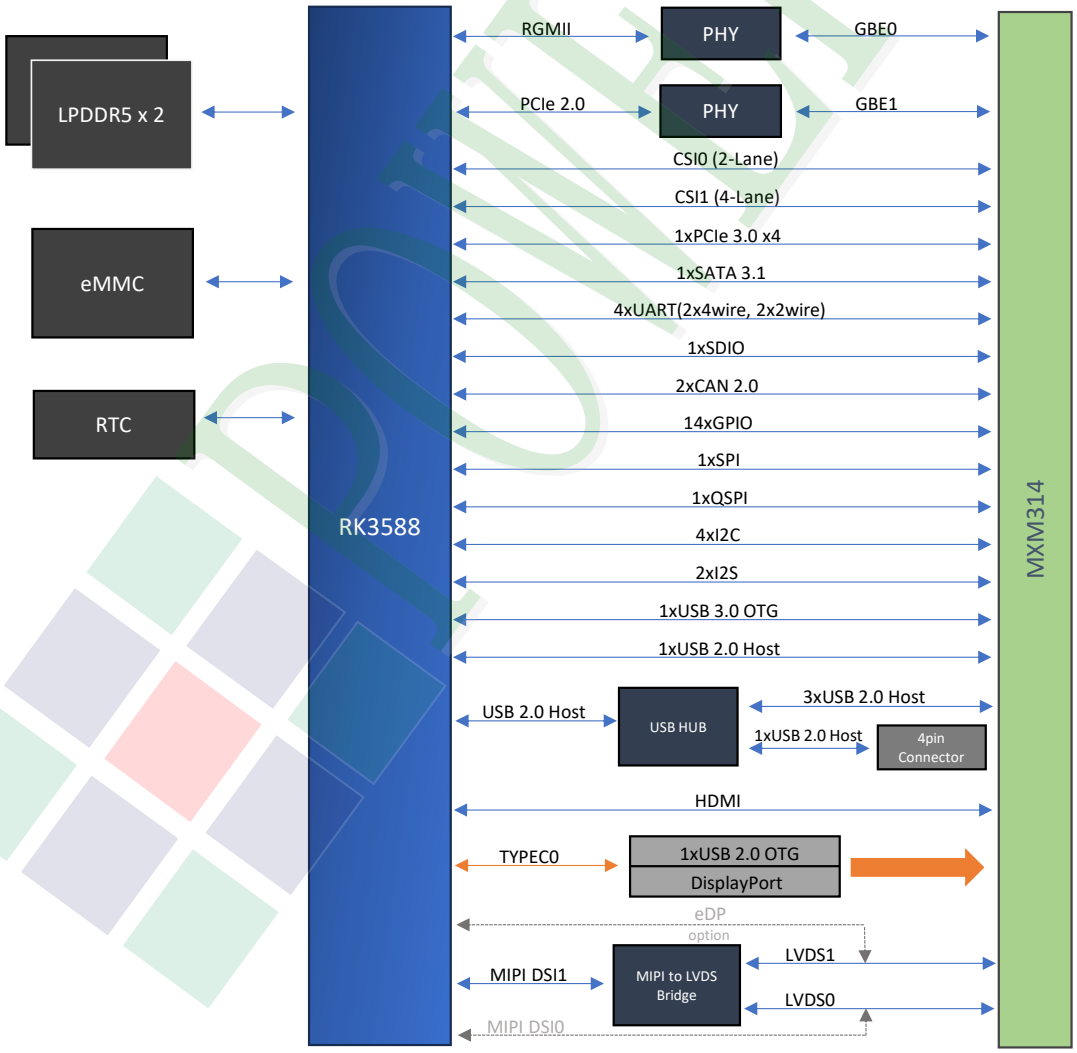
Specifications

Hardware		
CPU	RK3588	Arm Quad-core Cortex-A76 & Quad-core Cortex-A55
GPU	Mali-G610 MP4	OpenGL ES 1.1/2.0/3.2, OpenCL 2.2, Vulkan 1.2
NPU	RKNN	Accelerator with processing performance up to 6.0 TOPS
Memory	On Board RAM	4GB LPDDR5 SDRAM (Optional :8/16/32GB)
	Storage (Default Boot Device)	32GB eMMC Flash (Optional: 64GB/128GB)
I/O	Display	1 × LVDS (dual channel), up to 1080P@60Hz 1 × DisplayPort 1.4, up to 8K@30Hz 1 × HDMI 2.1, up to 8K@60Hz (Optional: eDP / MIPI-DSI)
	Camera	2 × MIPI-CSI (1 × 2-lane, 1 × 4-lane)
	Audio	2 × I^2S
	USB	1 × USB 2.0 OTG 1 × USB 3.0 OTG 4 × USB Host (1 × USB 3.0 + 3 × USB 2.0)
	Ethernet	1 × 10/100/1000 Mbps 1 × 10/100/1000/2500 Mbps
	PCIe	1 × PCIe 3.0 x4
	SATA	1 × SATA 3.1
	SDIO	1 × SDIO
	Serial Port	4 × UART (Ser3 for debug)
	CAN Bus	2 × CAN 2.0

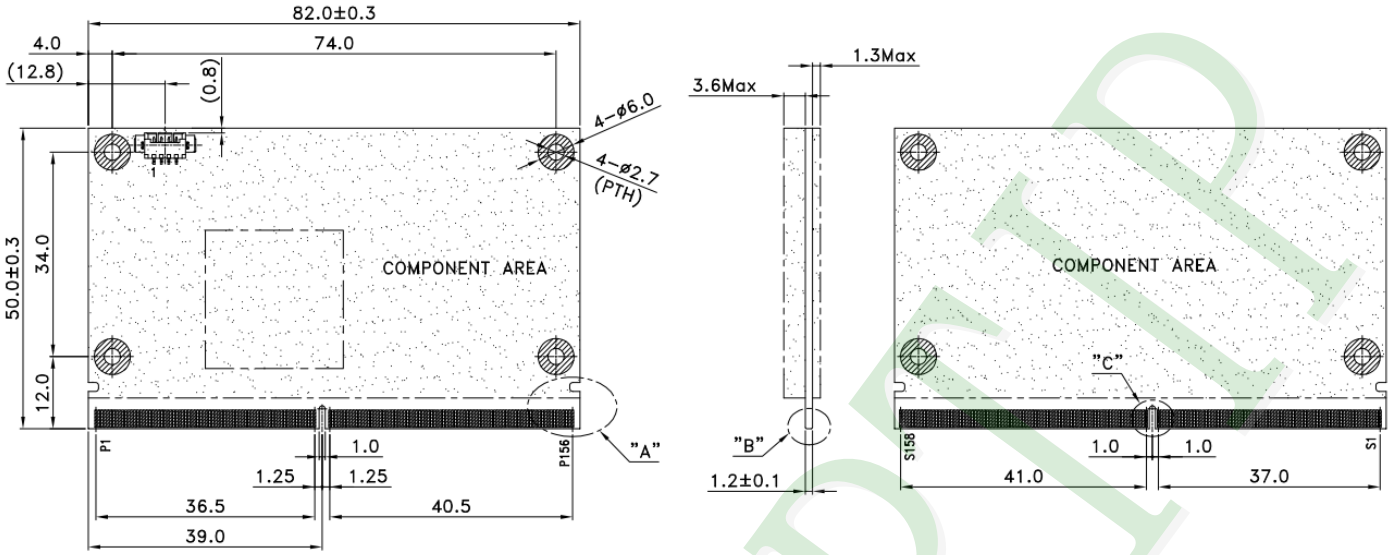
Hardware		
I/O	Low-speed Bus	4 × I²C 2 × SPI 1 × QSPI
Environment	Operating Temp.	0 ~ 70 °C
	Storage Temp.	-30 ~ 85 °C
Mechanical	Form Factor	SMARC 2.2 Module [82 × 50 mm]

Software		
OS	Default	Yocto 4.X
	Optional	Buildroot, Debian, Android

Block Diagram



Dimensions



POWERTIP