

reComputer Industrial R

The Most Reliable and Powerful Raspberry Pi CM5 Edge AIoT Controller/NVR



R20



R21



R22

Features

- Powerful Performance with Raspberry Pi CM5**
 Features up to 16GB RAM and 64GB eMMC.
- Robust Heat Dissipation**
 Fanless cooling, engineered for operation from -20°C to 65°C under heavy AI workloads.
- Industrial-Grade Reliability**
 High Accuracy RTC, hardware watchdog, SuperCAP UPS*, TPM*/ATECC608A*, IP40.
- AI-Optimized Computing**
 Hailo-8 AI accelerator (up to 26 TOPS) for real-time multi-channel AI vision processing.
- Rich Industrial Connectivity**
 RS485, RS232, DI, DO, CAN, Ethernet (PoE), HDMI, USB, Nano SIM card slot.
- Versatile Wireless Connectivity**
 On-chip Wi-Fi/BLE, Mini-PCIe for LTE/LoRa/Zigbee, and M.2 B-Key for 4G/5G.

Applications



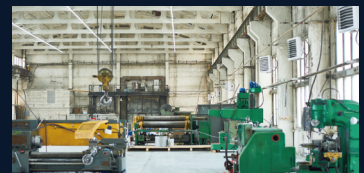
Smart Building



Energy Management



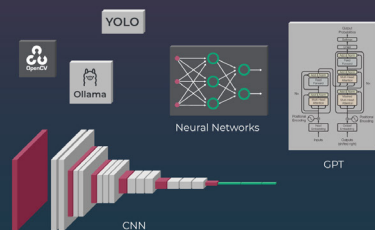
Remote Device Management



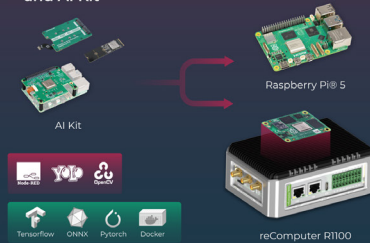
Facility Management

Raspberry Pi® AI from Zero to Hero - Learn with Seeed Github Course!

1 Introduction to AI



2 Set up your Raspberry Pi® and AI Kit



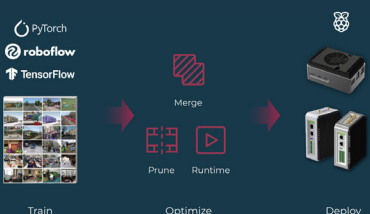
3 Computer Vision Projects and Practice



4 LLM



5 Custom Model Development and Deployment



6 Raspberry Pi® and AIoT



reComputer Industrial R Comparison

	Parameter	R20	R21	R22
Hardware Specification	CPU	Raspberry Pi CM5, 2.4GHz quad-core 64-bit Arm Cortex-A76		
	AI Processor	Optional Hailo-8 AI Acceleration 26TOPS		Pre-installed Hailo-8 M.2 AI Acceleration 26TOPS
	Operating System	Raspbian, Debian		
	Memory & Storage	2GB/4GB/8GB/16GB RAM; 16GB/32GB/64GB eMMC		
System Specification	Power Input	DC 9V~36V, 2-pin Terminal Block		
	PoE(as powered device)	IEEE 802.3at Standard 25.5W PoE		4 x PoE PSE
	Switch	Power Switch: No; Reboot Switch: Yes		
Interface	Ethernet	1x 10/100/1000 Mbps(supports PoE PD); 1x 10/100 Mbps IEEE 802.3/802.3u		4 x 10/100/1000 Mbps(supports PoE PSE); 1 x 10/100/1000 Mbps IEEE 802.3/802.3u
	USB	3x USB-A 3.0; 1 x USB-A 2.0; 1x USB-C 2.0 (For flashing OS & Debug)		4 x USB-A 3.0 Host; 1 x USB-C 2.0 (For flashing OS & Debug)
	RS485/RS232	3x RS485(Isolated); 1x RS232(Isolated)	2x RS485(Isolated); 2x RS232(Isolated)	2x RS485(Isolated); 1x RS232(Isolated)
	CAN	/	2x CAN FD(Isolated)	1x CAN FD(Isolated)
	DI/DO	8x Isolated DI; 8x Isolated DO	4x Isolated DI; 4x Isolated DO	4x Isolated DI; 4x Isolated DO
	SIM Card	1x Nano SIM Card Slot		
	M.2 Slot	1x M.2 2280 Slot for NVMe SSD; 1x M.2 2280 Slot for AI Accelerator		
		Optional Hailo-8 M.2 AI Acceleration		1x Pre-installed Hailo-8 M.2 AI Acceleration
		1x M.2 B-key 3042/3052 Slot for 5G/4G LTE		
	Mini-PCIe	1x Mini-PCIe for LoRa® module		
	Control & Indication	4x LEDs; 1x Buzzer; 1x Reset Button		
HDMI	2 x HDMI 2.0			
Wireless Communication	Wi-Fi & BLE	On-chip Wi-Fi 2.4/5.0 GHz; On-chip BLE 5.0		
	LoRa®	USB LoRa®*/ SPI LoRa®*		
	4G/5G Cellular	4G LTE/5G*		
	Zigbee	USB Zigbee*		
Standards	EMC	ESD: EN61000-4-2, Level 3; EFT: EN61000-4-4, Level 2; Surge: EN61000-4-5, Level 2		
	Certification	CE, FCC, TELEC, RoHS, REACH		
Ambient Conditions	Ingress Protection	IP40		
	Temperature	-20~65 °C(Operating)/ -40~85°C(Storage)		-20~50 °C(Operating)/ -40~85°C(Storage)
	Operating Humidity	10~95% RH		
Others	Supercapacitor UPS	SuperCAP UPS LTC3350 Module*		
	Hardware Watchdog	1~255s		
	RTC	High Accuracy RTC		
	Security	Encryption Chip TPM 2.0*/ATECC608A*		
	Heat Dissipation	Fanless		
	Warranty	2 years		
	Production Lifetime	Until December 2036		
Statement	Options marked with * require additional purchase according to the accessories list.			

