USR-EG928A

Linux Industrial Computer

Industrial 8-core 64-bit ARM-based CPU ， Linux Ubuntu， Node-Red
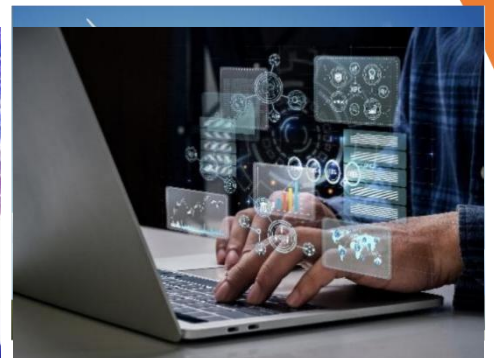
WukongEdge （Edge Computing+PLC+SCADA） ， Diverse Hardware Interface

AI Language Model　　**Images and Vision**　　**Data Analysis**

Product Overview

The USR-EG928A is a high-performance, open-source gateway/controller designed to meet the demands of complex industrial and IoT applications. Powered by the RK3588J octa-core 64-bit ARM architecture CPU with a main frequency up to 2.4GHz and an AI Neural Processing Unit (NPU) delivering 6.0 TOPS performance, it effortlessly handles high-computation tasks, providing robust power for intelligent applications.

This controller boasts a rich set of interfaces, including built-in cellular, Ethernet, and WiFi connectivity options, along with multiple serial ports, CAN interfaces, HDMI, and more, ensuring flexible adaptation to diverse scenario requirements. Pre-installed with the Linux Ubuntu 22.04 OS featuring a desktop environment, it offers a developer-friendly setup. It is fully compatible with the proprietary WukongEdge edge application, delivering exceptional edge computing capabilities. Simple configuration enables data acquisition, processing, and reporting. When combined with AI algorithms, it significantly enhances data utilization efficiency.

Furthermore, the USR-EG928A comes with comprehensive driver support and compatibility with various AI development tools and interfaces, truly enabling "out-of-the-box" usability and helping developers get started quickly and develop efficiently.

AI Computing

Smart City, Vehicle Recognition

Digital Human Smart Office

Key Features

- RK3588J, octa-core 64-bit CPU, 2.4GHz max frequency, delivering ultra-high performance and fast operation.

- Multiple network options: 3 Gigabit Ethernet ports, 4G, WiFi, ensuring stable network transmission and preventing downtime.

- Multiple communication interfaces: 2 RS485 ports, 4 RS232 ports, and 2 CAN interfaces.

- 2x USB 2.0 and 2x USB 3.0 ports, supporting HDMI OUT and HDMI IN.

- Standard Linux Ubuntu OS with a graphical interface for convenient operation.

- Embedded Node-RED for simpler, faster development, capable of loading more protocol libraries for rapid programming.

- Powerful edge gateway functionality: supports edge data collection, edge computing, grouped reporting, handles 6000+ data points, and supports point expansion.

- Rich protocol support for data acquisition: supports standard Modbus, various mainstream PLC protocols, and multiple industry-specific protocols.

- Linkage control: supports multi-point linkage, SMS alarm linkage, platform alarm linkage, data point control linkage, and DO control linkage.

- Multi-protocol conversion: integration and conversion for protocols like Modbus, OPC UA, power protocols, building automation protocols, and more.

- Built-in SCADA (HMI/MMI): allows local editing for data dashboard visualization.

Specification

Hardware	
Processor	Rockchip industrial-grade CPU RK3588J, max frequency 2.4GHz ARM octa-core 64-bit processor: 4x Cortex-A76 (big cores) + 4x Cortex-A55 (small cores)
GPU	Mali-G610 GPU, MP4 quad-core GPU Supports OpenGL ES3.2,OpenVG1.1,OpenCL2.2,450GFLOFS
NPU	Built-in NPU with strong AI computing performance Supports INT4/INT8/INT16/FP16 operations, computingpower up to 6.0 TOPS Supports connecting 2x PCIe M.2 AI acceleration sticks Supports Cafe, Mxnet, TensorFlow, PyTorch, TFLite, ONNX, Darknet, etc. models
OS	Linux Ubuntu 22.04
RAM	LPDDR4 8GB
ROM	eMMC 128GB，supports external TF card expansion
Media	Supports 8K 60fps H.265/H.264 video decoding Supports 8K 30fps H.265/H.264 video encoding Supports simultaneous encode/decode Maximum capability: 32 channels of 1080P 30fps decoding and 16 channels of 1080P 60fps encoding
Network	Supports 3 * Ethernet ports 10/100/1000Mbps
	Supports 2.4G/5G dual-band WiFi IEEE802.11 a/b/g/n/ac 2.4 GHz：2.400~2.4835 GHZ 5 GHz：5.150~5.850 GHZ
	Supports 4G functionality
SIM Slot	Micro SIM card slot for cellular network, single card single standby
Display Interfaces	1*HDMI 2.1, supporting 8K 60Hz output 1*HDMI 2.0, supporting 4K 60Hz input
RTC	Built-in Real-Time Clock with RTC coin cell battery
USB	2*USB2.0 HOST 1*USB3.0 HOST +1* USB3.0 OTG
Audio	1*Headphone/Mic combo output
LED	1*PWR(Red), 1*System(Blue, flashing after starting)
Buttons	1* Reset, 1*Upgrade（UBOOT）
Serial	4*RS485(4000V isolated) 2*RS232/RS485(select via jumper, 4000V isolated, default is RS485)
CAN	2*CAN(4000V isolated)

I/O	2*DO, 2*DI 口(4000V isolated)
Power Input	DC: 9V~36V/5A (Requires surge voltage < 14V, ripple voltage < 100mV) Connector Standard: DC jack 5.5 * 2.1mm Bare device power consumption: ≥9.48W
Bare Device Weight	3.010kg
Operating Temperature	-25℃ - 75℃
Storage Temperature	-35℃ - 85 ℃
Operating Humidity	5%RH - 95%RH
Language	Default English, other languages can be downloaded via network
Keyboard	Standard Android keyboard, optional third-party IMEs (Chinese, Korean, Japanese, etc.)
Software	
Edge Computing	6000+ data points, supports edge collection, computing, active reporting, and other edge functions.
Protocol Conversion	Supports Modbus, OPC UA, JSON, IEC104, IEC61850, BACnet, etc.
Acquisition Protocols	Various PLC protocols, IEC104, IEC61850, BACnet, DLT645, etc.
SCADA (HMI/MMI)	Supports local SCADA editing and local visualization.
Secondary Development	Standard Linux Ubuntu OS, supports C/C++, etc. development. Includes the latest Node-RED, can install Docker and other applications.

Ordering Guide

Model	Ethernet	Cellular	WiFi	Region	Frequency band
USR-EG928A-G4	√	LTE Cat4	2.4GHz 5.8GHz	China, India	LTE TDD：Band 34/38/39/40/41 LTE FDD：Band 1/3/5/8 GSM：900/1800MHz WiFi：IEEE802.11 a/b/g/n/ac WiFi-2.4:2.4-2.4835GHz WiFi-5.8: 5.15-5.85GHz
USR-EG928A-GL	√	LTE Cat4	2.4GHz 5.8GHz	Global	LTE-FDD:B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66 LTE-TDD: B34/B38/B39/B40/B41 WCDMA: B1/B2/B4/B5/B6/B8/B19 GSM: B2/B3/B5/B8 GPS：GPS/GLONASS/BDS/Galileo/QZSS WiFi：IEEE802.11 b/g/n/ac WiFi-2.4:2.4-2.4835GHz WiFi-5.8: 5.15-5.85GHz

USR-EG928A-EW	√	--	2.4GHz 5.8GHz	Global	WiFi：IEEE802.11 b/g/n/ac WiFi-2.4:2.4-2.4835GHz WiFi-5.8: 5.15-5.85GHz

Product Details