CGate310-G

Expandable ARM Industrial Mini Computer



- 1×1G WAN/LAN, 1×100M LAN
- 2×RS485, 1×RS232, 1×CAN, 2×USB 2.0, 1×USB 3.0
- Support LTE 4G CAT-4 global band cellular network, automatically failover with WAN
- Support 2.4&5.8 GHz dual-band WiFi
- Support flexible plug-and-play I/O expansion
- RK3562J quad-core Cortex-A53, up to 2.0 GHz
- Ubuntu Linux OS, C/C++ programming, Node-RED, and Docker supported
- Support GPS function
- Support Modbus, OPC UA, JSON, IEC104, IEC61850, Bacnet, etc
- Multiple PLC protocols: IEC104, IEC61850, Bacnet, DL/T645, etc.
- Support MQTT via AWS IOT, Alibaba Cloud, HUAWEI Cloud, etc.
- DC 9~36V wide input voltage. Level 3 EMC protection
- -20℃~+70℃ operating temperature

Product Description

CGate310-G is a fanless, expandable industrial computer designed for edge computing and industrial control applications. Powered by the RK3562J industrial-grade quad-core 64-bit ARM Cortex-A53 processor running at up to 2.0 GHz, it delivers reliable performance for data acquisition, edge computing, and PLC control.

Running on Linux Ubuntu, CGate310-G supports edge data collection, protocol conversion, local configuration, and PLC programming. It features built-in Node-RED graphical programming and supports Docker for flexible application deployment and secondary development using C/C++.

This high-performance industrial gateway offers rich connectivity, including 4G cellular, two Ethernet ports, Wi-Fi, GNSS, multiple RS485/RS232/CAN serial ports, USB 3.0, HDMI, and expandable I/O, enabling seamless integration with industrial equipment and legacy devices.

With powerful edge processing capabilities and broad protocol support such as Modbus, OPC UA, BACnet, and PLC protocols, CGate310-G is ideal for applications in intelligent healthcare, smart buildings, and smart agriculture.

Product Features

- Powered by RK3562J quad-core 64-bit ARM CPU running at up to 2.0 GHz for high-performance operation
- Multiple networking options, including two Ethernet ports, 4G, and Wi-Fi, ensuring stable and reliable connectivity
- Rich communication interfaces: 2×RS485, 1×RS232, and 1×CAN
- Display and USB interfaces: HDMI output, 2×USB 2.0, and 1×USB 3.0
- Expandable I/O with plug-and-play module support
- Based on Linux Ubuntu with a user-friendly GUI for easy operation and management
- Embedded Node-RED graphical programming for rapid application development with extended protocol libraries
- Powerful edge gateway capabilities, supporting edge data collection, edge computing, and grouped reporting with up to 2000 real-time points (expandable)
- Rich data acquisition protocols, including standard Modbus, PLC, and other industrial protocols
- Advanced linkage control, supporting multi-point linkage, SMS/platform alarms, point control, and DO control
- Multiple protocol conversions, integrating Modbus, OPC UA, power protocols, and building automation protocols
- Built-in PLC logic compliant with the IEC 61131 standard
- Local configuration and dashboard display are supported through built-in configuration tools

Technical Specifications

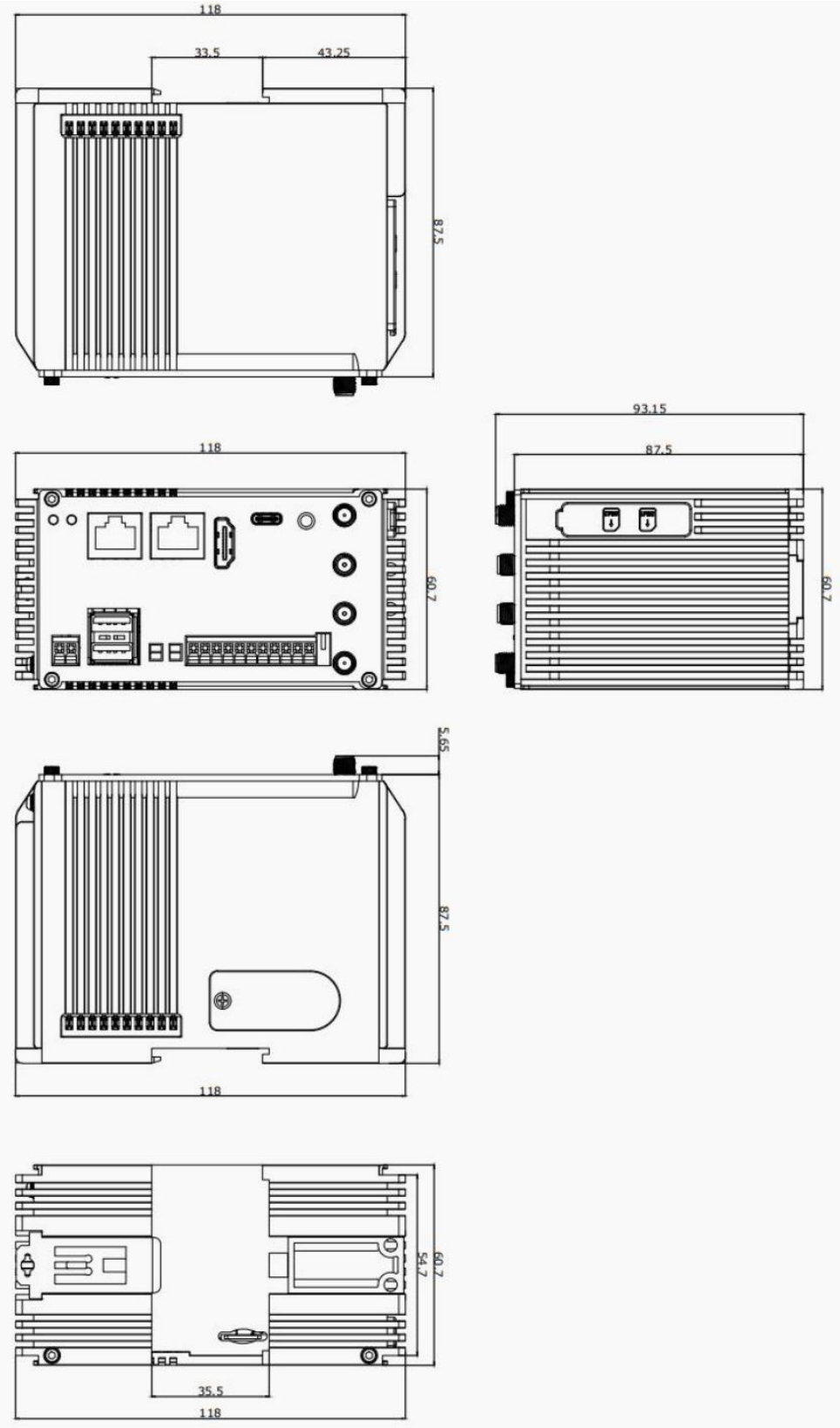
Hardware Parameters		
Processor CPU	Rockchip RK3562J ARM quad-core 64-bit processor, clocked up to 2.0GHz	
Graphics Processor GPU	ARM G52 2EE GPU Support OpenGLES 1.1/2.0/3.2, OpenCL 2.0, Vulkan 1.1, embedded high-performance 2D acceleration hardware	
Neural Network Processing NPU	Built-in NPU with 1.0 TOPS @ INT8, supporting Caffe, MXNet, TensorFlow, TFLite, ONNX, and Darknet models	
Operating System	Linux Ubuntu 20.04	
Memory	DDR4 4GB	
Storage	eMMC 32GB	
SD Memory	Support SD card storage, up to 128 GB	
Network	Ethernet	1×1G WAN/LAN, 1×100M LAN
	Dual-band WiFi	IEEE 802.11a/b/g/n/ac/ax
		2.4 GHz: 2.400~2.4835 GHZ 5 GHz: 5.150~5.850 GHZ
	Cellular	LTE 4G Cat-4
GPS	Built-in GPS/BD module, Sensitivity: -162 dBm Receiving frequency: 1575.42 MHz Satellite channel: 20 channel Positioning accuracy: <10m	
SIM	Nano SIM card slot for cellular networking Dual SIM Single Standby, Dual External Card.	
Display Interface	1×HDMI OUT 2.0 supports 4K 60 fps output	

Audio	1×Headset output
RTC	Built-in real-time clock power supply battery support timing switch on / off
USB	2×USB2.0 HOST 1×USB3.0 OTG (compatible upgrade, default HOST function, Type-C interface)
LED	1×Power status LED (red) 1 ×Operating status LED (green, blinking by default) L1 and L2 are user-defined indicators
Key	1×Upgrade button (used for firmware upgrade) 1× Factory restore button (Used to restore edge application parameters to factory settings)
Serial Port	1×RS232 ,2×RS485
CAN	1×CAN
IO Interfaces	Expandable
Power Input	9~36V wide voltage supply
Operating Temperature	-20-70℃
Storage Temperature	-20-80℃
Operating Humidity	5%-95% (non-condensing)
Muitimedia	Video decoding: 4K@60 fps H.265/H.264 Video encoding: 1080p@100 fps H.265/H.264 ISP: 8 MP with HDR
Language Support	English by default, with additional languages available for download
Input method	Standard Android keyboard with optional third-party input methods (Chinese, Korean, Japanese, etc.)

Software parameters	
Edge Computing	Support over 2000 points, edge collection, calculation, active reporting, and other edge functions
Protocol Conversion	Support Modbus, OPC UA, JSON, IEC104, IEC61850, Bacnet, etc.
Collection Protocol	Multiple PLC protocols, IEC104, IEC61850, Bacnet, DL/T645, etc.
Configuration	Support configuration local editing, local display
PLC	Comply with IEC61131-3 standard, support 5 PLC programming languages
Secondary Development	Standard Linux Ubuntu system, support C/C++ development. It has a built-in new version of Node-Red and can install applications such as Docker

Dimensions

Unit: mm (first angle projection)



Ordering Information

Standard Model	1G Copper Port	100M Copper Port	RS232	RS485	CAN	USB
CGate310-G	1	1	1	2	1	3

Cellular	Area	Band
LTE 4G Cat-4	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

WiFi Band	WiFi Standard	GPS
WiFi-2.4:2.4-2.4835GHz WiFi-5.8: 5.15-5.85GHz	IEEE 802.11 a/b/g/n/ac/ax	GPS/GLONASS/BDS/Galileo/QZSS

Antenna	Power Input
1×WiFi, 2×4G, 1×GPS	DC12~36

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