

Z4

Edge Computing Gateway



Overview

Z4 Edge Computing Gateway is a high-performance industrial protocol gateway with edge computing capability provided by its open software architecture. It has a variety of communication methods, including cellular, local wireless, wired and fieldbus network, supporting link control algorithm to ensure reliable network communication. The industry-oriented design makes it adaptable to wide temperature ranges and strong electromagnetic interference environments. Z4 is suitable for remote data acquisition from industrial PLC, RTU, meters, etc. with integrated protocol database, machine control by its rich I/O interfaces, as well as remote maintenance via our cloud platform, making it an ideal choice in the field of industrial IoT.

Highlights

Global Cellular Communication & Remote Management

- Release 16 & Release 17 compliance on 5G-sub6 & Redcap
- Backward support 4G/3G for global network bands
- Multi-WAN options: 5G, LTE &, GigE, dual SIM backup
- Hongdian Cloud remote management with location information

Powerful System Performance & Rich Hardware Interfaces

- Quad-core Cortex-A55, 2.0GHz, 1Tops, 2GB DDR4, 8GB eMMC
- Wireless Interfaces: Wi-Fi 6, Bluetooth 5.2, Lora optional
- I/O Interfaces: 4 RJ45, VCC-IN/OUT, 4 DI, 2 relays, 2 serial, USB 2.0, TF card
- Expansion: More interfaces with Z4-ex I/O modular product

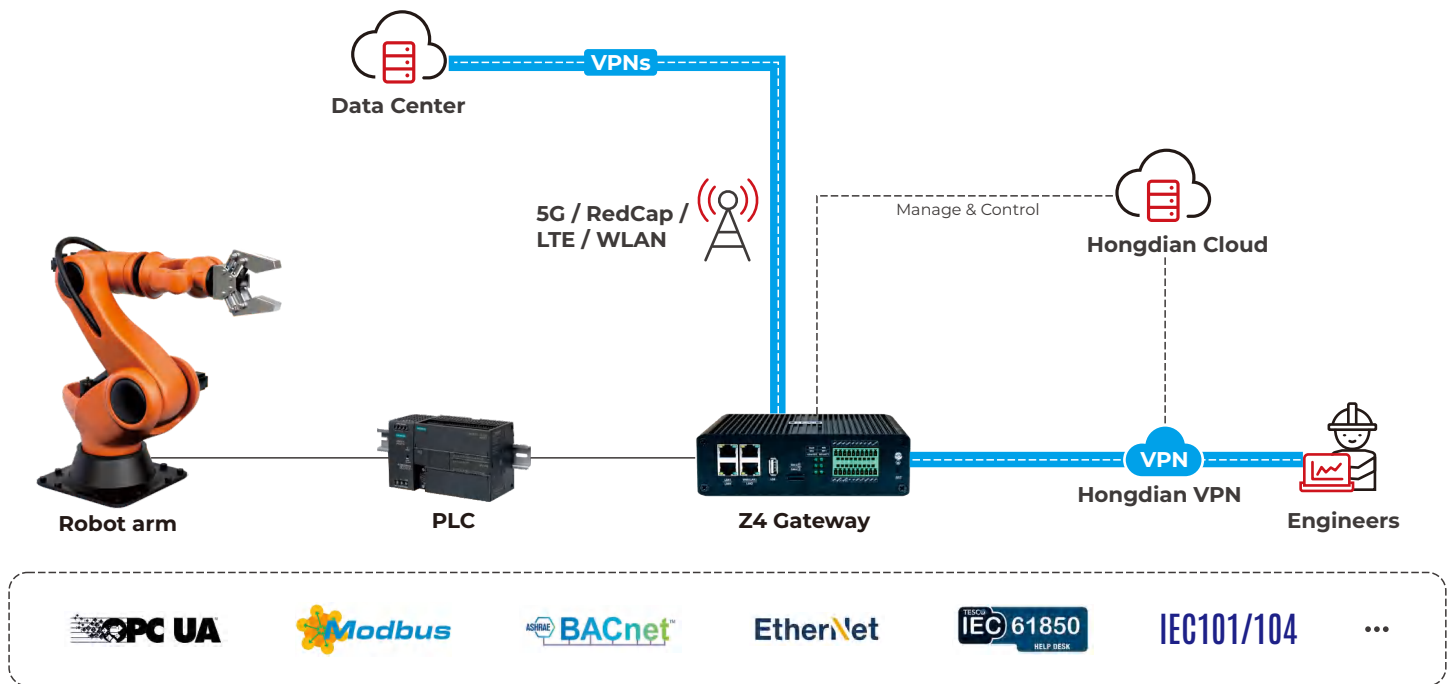
Integrated Industrial Data & Security Features

- 5G B-code Timing and built-in RTC
- Common industrial protocols & PLC drivers, 3rd party cloud integration
- Data Protection with IPsec/OpenVPN/GRE/L2TP/PPTP/DMVPN
- Hongdian Cloud VPN remote access & SD-WAN networking

Easy APP Development & Deployment

- Container support: Docker for app deployment
- Development Languages: C, C++, Java, Python
- Simplify development with SDKs and APIs
- Cloud based APP deployment with Hongdian Cloud

Topology diagram



Smart Manufacturing



Smart Factory



Water Pump



HMI

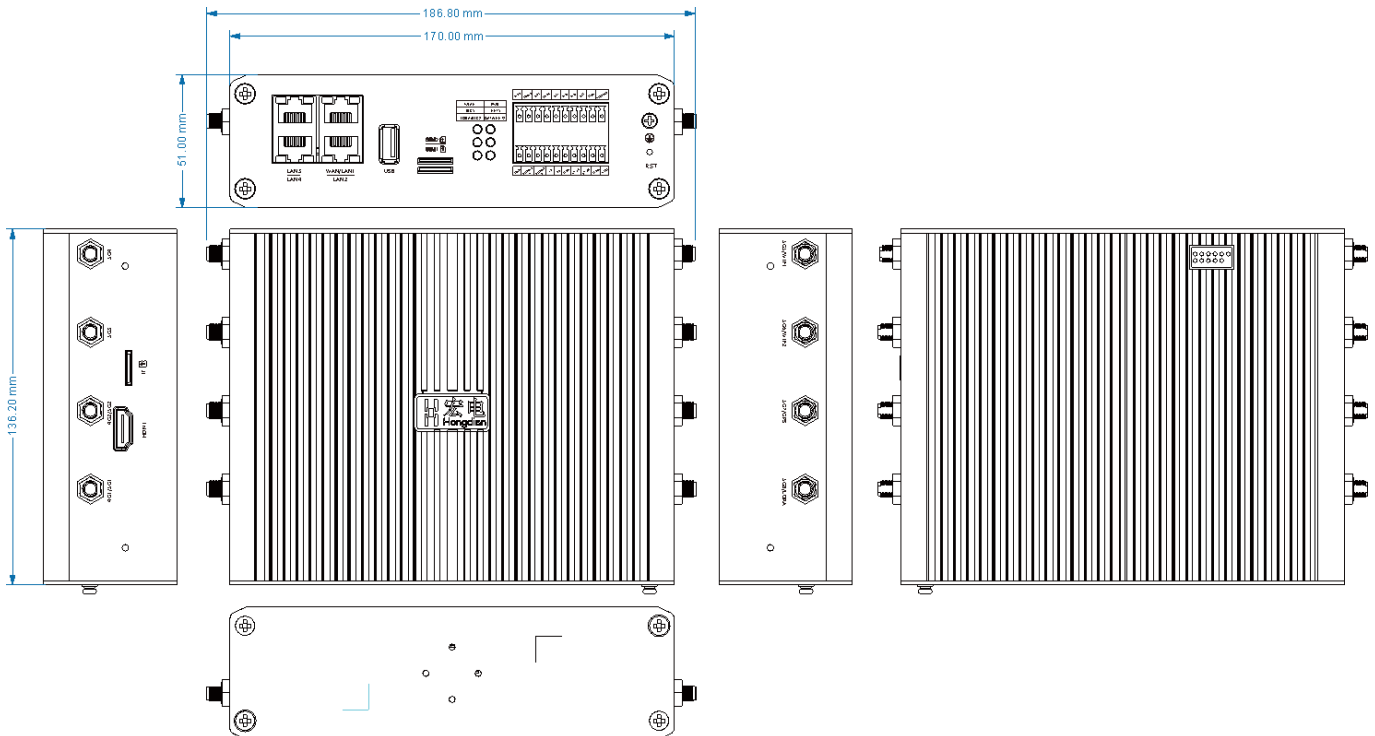
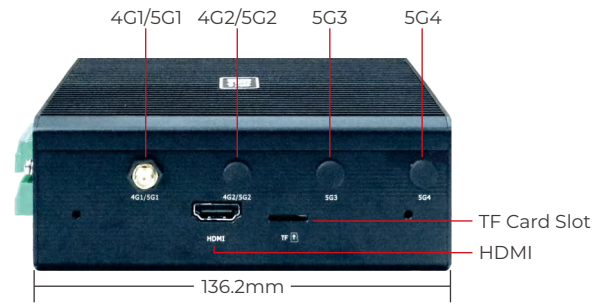
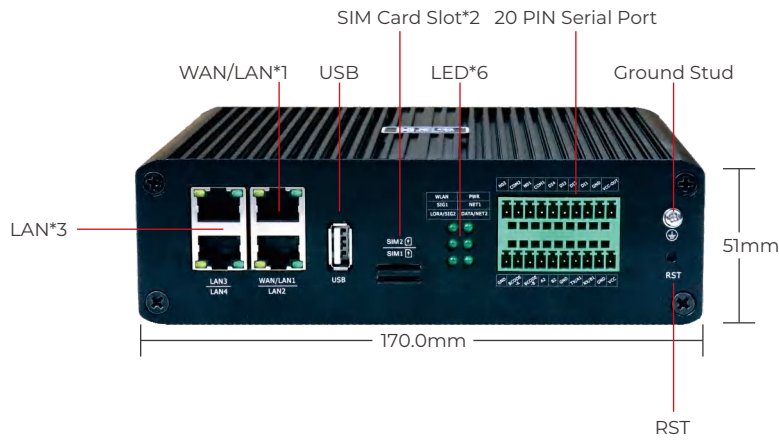
Specification

Hardware			
CPU	Quad ARM Cortex-A55 2.0GHz	NPU	1 TOPS for lightweight AI
Memory	2GB	Built-in storage	8GB
GPU	Mali G52 2EE, OpenGL ES 1.1/2.0/3.2, OpenCL 2.0 & Vulkan 1.1		
Cellular Interface			
Modem	1 × LTE Cat4 or 1/2 × 5G NR SA/NSA	Number of Antennas	2 (LTE version) or 4/8 (NR version)
SIM	2	Connector	SMA-K
Wireless Interface			
Standards	802.11b/g/n/ac/ax, AP or station modes	Frequency Bands	2.4 GHz & 5 GHz
Speed	583Mbps	Security	WEP, WPA, WPA2
Encryption	64/128 AES, TKIP	Antennas	2
Connector	SMA-K		

Specification

GNSS Interface			
Number of Antennas	1	Connector	SMA-K
Peripheral Interface			
Etehernet	4 × RJ45 10/100/1000Mbps adaptive (1 of which supports WAN, LAN switching)		
Serial	1 × RS-232/RS-232 + 1 × RS-485 serial port	USB	1 × USB2.0
TF Card	1	HDMI	1
Extension interface	Extendable interface module Z4-EXT		
Software			
Auto Fail-over	Between: 2 Cellulare, Cellular and WAN, Cellular and Wi-Fi (station mode), WAN and Wi-Fi (station mode)		
Network Protocols	PPP, PPPoE, TCP, UDP, DHCP, ICMP, NAT, HTTP, HTTPS, DNS, ARP, NTP, SMTP, Telnet, SSH, DDNS, etc.		
Network	APN, VPDN, VLAN, QoS		
Routing	Static Routing, Policy routing, RIP, OSPF and BGP, etc		
Firewall	NAT, PAT, DMZ, Port Forward, IP/Domain/MAC Filter, Access Control List		
Attack Prevention	DDOS prevention, Anti port scanning		
VPN	PPTP/L2TP/GRE/IPSec/OpenVPN/DMVPN/WireGuard		
Ipssec Encryption	DES, 3DES, AES128, AES192, AES256		
OpenVPN Encryption	BF-CBC, DES-CBC, RC2-CBC, DES-EDE-CBC, DES-EDE3-CBC, DESX-CBC, RC2-40-CBC, CAST5-CBC, RC2-64-CBC, AES-128-CBC, AES-192-CBC, AES-256-CBC, SEED-CBC		
Remote Management	HTTP, Telnet, SSH, SMS, SNMP V1/V2/V3, SNMP TRAP, Hongdian Wedora Cloud Platform		
Serial Ports Function	Transparent, Modbus RTU, etc		
Industrial Protocol			
Common Protocols	OPC-UA Client&Server, BACNet/IP Client&Server, Modbus RTU/TCP/ASCII, Modbus Master, BACnet/IP, Ethernet/IP, IEC101/104, IEC61850-modbus, etc.		
Cloud Integration	MQTT, HTTPS, Hongdian HMP, TCP/UDP, etc	Configuration Tool	HDGatewayManager
Development			
Deployment	Docker Container to deploy your own APP		
Coding language	C, C++, Java, Python, etc		
Hongdian Cloud Management			
Device Management	Device status monitoring, configuration, OTA with schedule task, etc		
Remote access	One click VPN tunnel for remote access to machines, PLCs, RTUs, HMIs, meters, etc		
SD-WAN Networking	Zero-touch-provisioning for branch networking with Overlay VPNs		
Power Supply and Consumption			
Connector	2 pin socket	Voltage Input	+9V~+48V DC
Power Consumption	400mA@12V DC, Data transceiving: 1.5A@12V DC		
Others			
Reset Button	Yes	Hardware Watchdog	Yes
LED Indicators	6 indicators for PWR, WLAN, NET1, SIG1, DATA/NET2, LORA/SIG2		
Physical Characteristics			
Ingress Protection	IP30	Housing & Weight	Metal, 1060g
Dimension	170.0 × 136.2 × 51.0(mm)	Installations	Desktop, wall mounting and DIN rail mounting
Operating Temperature	-35 ~ +75 °C	Storage Temperature	-40 ~ +85 °C
Relative Humidity	95%		

Appearance








Ordering info

Part No.	Network	Frequencies	Interface					Certifications (*In progress)	Region
			SIM	WLAN	GigE	RS232	RS485		
Z4-L4EA-S2-W2	LTE Cat4	4G (LTE-FDD): B1/B3/B5/B7/B8/B20 4G(LTE-TDD): B38/B40/B41 3G: B1/B5/B8 2G: B3/B8	2	AX	4	-	2	CE*, RoHS*	Europe, the Middle East, Africa, Korea, Thailand, India, Malaysia
Z4-L4NA-S2-W2		4G (LTE-FDD): B2/B4/B5/B12/B13/B14/B66/B71 3G(WCDMA): B2/B4/B5						FCC*, PTCRB*	North America
Z4-L4SA-S2-W2		4G (FDD-LTE): B1/B2/B3/B4/B5/B7/B8/B28 4G (LTE-TDD): B40 3G: B2/B3/B5/B8						RCM*, Anatel*	Oceania, South America
Z4-NRGL-S2-W2	5G NSA/SA	NSA/SA: n1/n2/n3/n5/n7/n8/n12/n13/n14/n18/n20/n25/n26/n28/n29/n30/n38/n40/n41/n48/n66/n70/n71/n75/n76/n77/n78/n79 LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE-TDD: B34/B38/B39/B40/B41/B42/B43/B48 WCDMA: B1/B2/B4/B5/B8/B19	2	AX	4	-	2	CE*	Global
Z4-RCGL-S2-W2									
Z4-NR2GL-S2									

* For example, Z4-NRGL-S2-W2, Z4 Industrial Gateway, support 5G NSA/SA, the application area is Global, support two RS-485, support two Wi-Fi antennas. Z4-RCGL-S2-W2, Z4 Industrial Gateway, support Redcap module, the application area is Global, support two RS-485, support two Wi-Fi antennas. Z4-NR2GL-S2, Z4 Industrial Gateway, support dual 5G modules, the application area is Global, support two RS-485.

Packing list

			
Z4 Edge Computing Gateway	1× Power adapter	1×Ethernet cable	
			
WiFi antennas	4G antennas	NR antennas	Mounting kits