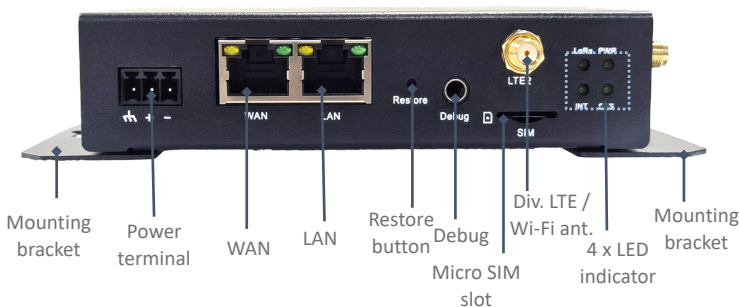# GLR200 LoRaWAN Gateway

▬ Product Brief

Vantron GLR200 LoRaWAN gateway supports the LoRa physical layer technology and complies with the LoRaWAN V1.1 specification. It facilitates long-range wireless connectivity with high sensitivity, ensuring reliable data transmission while operating efficiently with a power consumption of less than 5W under load.

GLR200 detects data packets and demodulates them based on 8 frequency channels and SF5~SF12. It provides a reliable and efficient way to transmit data from LoRaWAN Class A and Class C end devices to a LoRaWAN network server which manages the entire LoRaWAN network. It offers two fast Ethernet ports to connect to an Ethernet switch/router and provide essential IP networking features. It also supports 4G LTE and optional Wi-Fi connectivity, while the multi-mode GNSS module provides precise timestamping and high-accuracy geolocation.

GLR200 offers a comprehensive solution for deploying LoRaWAN networks, combining robust network management capabilities and advanced geolocation functionalities. It allows connection of thousands of end devices scattered in very long distances and is well-suited for smart grid, agriculture, industrial automation, oil & gas, public security, and more.

▬ Exterior and Features

Mounting bracket
Power terminal
WAN
LAN
Restore button
Debug
Micro SIM slot
Div. LTE / Wi-Fi ant.
4 x LED indicator
Mounting bracket

Div. LTE /Wi-Fi antenna
Primary LTE antenna
LoRa antenna
GNSS antenna
DIN rail mount

GLR200

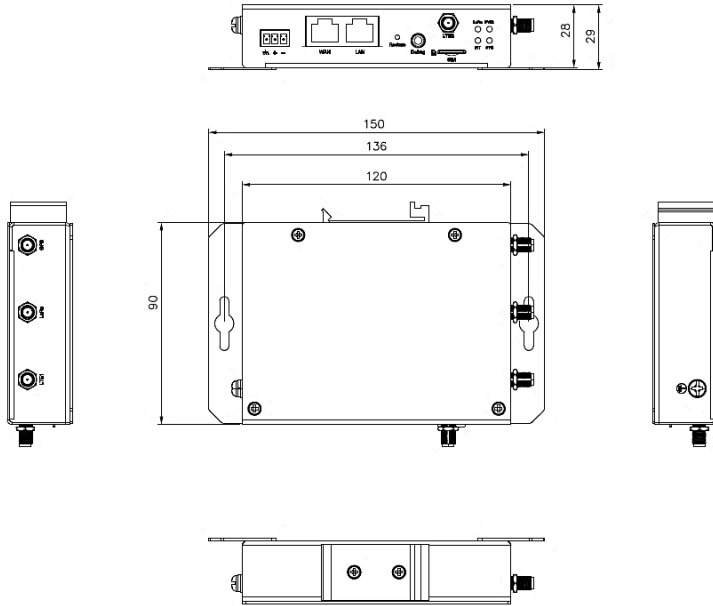|	
LoRa	High-performance LoRa chipset, up to -141dBm sensitivity; 8 channels x 8 SF; ~ 22dBm TX power
	Sub-1 GHz frequency bands supported
	Up to 15km in remote areas, 5km in urban areas
	Support connection of thousands of end devices
	Low-latency, reliable wireless data transmission
	Ethernet, optional Wi-Fi, 4G LTE connectivity
	Multi-mode high-sensitivity satellite navigation
	Ultra-low power consumption

GLR200 LoRaWAN Gateway Datasheet

GLR200		
System	CPU	MIPS24KEc, 580MHz
	Memory	256MB
	SPI flash	64MB
Communication	Ethernet	2 x RJ45, 100Mbps
	Wi-Fi	Wi-Fi 802.11 b/g/n (Optional for North America version)
	4G LTE	CAT 1
	RF	LoRa
	GNSS	BDS, GPS, GLONASS, GALILEO
LoRa Features	Frequency	915MHz, 490MHz
	Transmit power	~ 22dBm
	Bandwidth	125 kHz / 250 kHz / 500kHz
	Packet detector	8 Channels x 8 Spreading factors (SF5~SF12)
	Receiver sensitivity (Typical)	-121dBm (at 125kHz bandwidth, SF5)
		-127dBm (at 125kHz bandwidth, SF7)
		-141dBm (at 125kHz bandwidth, SF12)
	Antenna impedance	50Ω
	LoRaWAN	LoRaWAN V1.1 (backward compatible with LoRaWAN V1.0)
		Support for Class A and C end devices
4G LTE Features	Frequency band	North America: LTE-FDD:B2/B4/B5/B7/B12/B13/B25/B26; LTE-TDD:B41
		China: LTE-FDD: B1/B3/B5/B8, LTE-TDD: B34/B38/B39/B40/B41
I/Os	Debug	1 x 3.5mm Audio jack for device debugging (RS232)
	SIM slot	1 x Micro SIM slot
	Antenna	1 x LoRa antenna, SMA connector
		1 x GNSS antenna, SMA connector
		North America: 2 x 4G LTE / 1 x 4G LTE + 1 x Wi-Fi antenna, SMA connector
		China: 1 x 4G LTE antenna, SMA connector
	WDT	Supported
System Control	LED indicator	1 x Power indicator
		1 x LoRa communication indicator
		1 x Network status indicator
		1 x System status indicator
	Button	1 x Restore button (1~5s: Restart the device; > 5s: Factory reset)
Mechanical	Enclosure	Aluminum
	Dimensions	150mm x 90mm x 29mm (including the mounting brackets)
	Installation	Wall mounting, DIN rail mounting
	IP rating	IP30
Power	Input	12V/1A DC
		1 x Power terminal (3-pin, 3.81mm)
	Consumption	< 5W (load)

GLR200		
Software	Operating system	VantronOS
	Device management platform	Vantron BlueSphere GWM (Optional)
	Log	Supported
	Upgrade	Local, OTA update
Network	IP features	DHCP client (IPv4), Static IP (IPv4), PPPoE
		Network Address Translation (NAT)
		Domain Name System (DNS)
		Network Time Protocol (NTP)
	Network diagnostics	Ping, Traceroute, Nslookup
Security & Reliability	Firewall	Supported
	VPN	OpenVPN, L2TP, PPTP, IPSec
	Multi-level permission	Supported
	Link detection	Heartbeat detection, automatic re-connection
	Network reliability	Failover supported, link backup between Ethernet and 4G LTE
	Software integrity	Secure boot, SHA256 for firmware signature, and u-boot
Environment Condition	Temperature	Operating: -20℃~+60℃ Storage: -40℃ ~ +85℃
	Humidity	Operating: 5%-95% RH (Non-condensing)
	EMC level	EMC Level 3
	Certification	FCC, ISED

Application Topology

End Points

LoRaWAN Gateway

LoRaWAN Network Server

DTU-LoRa

Non-LoRa Node

Effectively transmits field data from **non-LoRa** actuators or sensors to a LoRaWAN gateway and finally to a LoRaWAN network server

GLR200

OPTION 1

RS232/RS485

LoRa RF LoRaWAN

Ethernet/ Wi-Fi/ Cellular

LoRa Node

OPTION 2
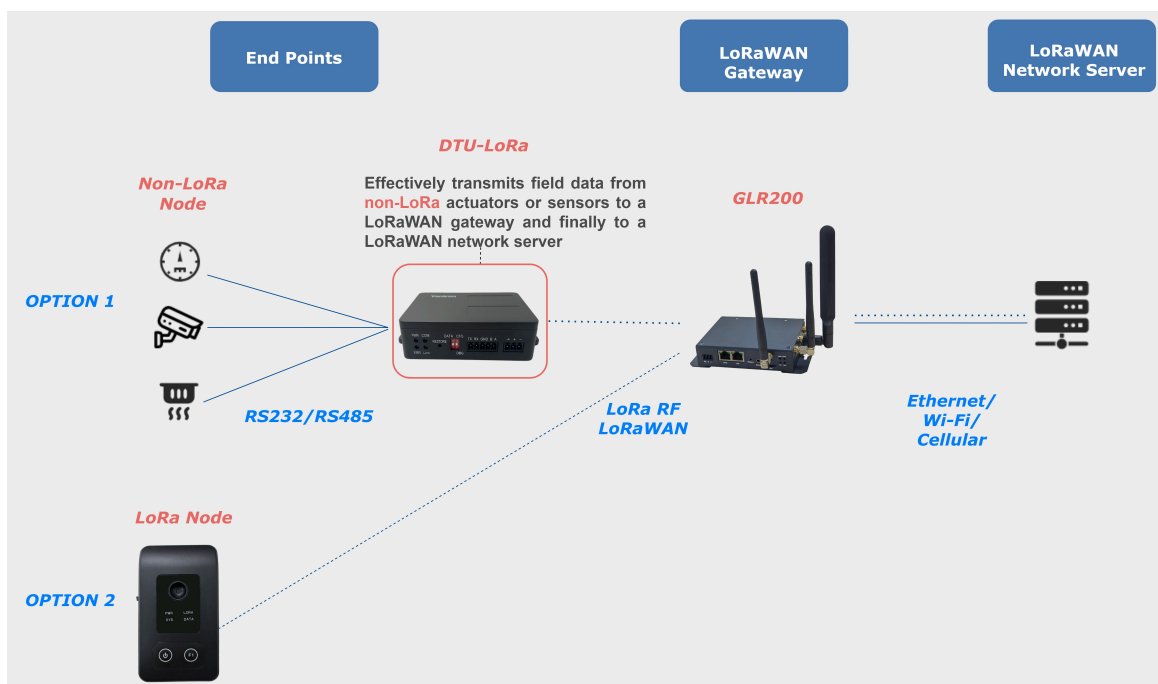
Product Outlines

Ordering Information

Ordering No.	Description	Installation	
GLR200-NA	Ethernet, 4G LTE, GNSS, LoRaWAN, 915MHz	Wall mounting	DIN rail mounting
GLR200-WLAN-NA	Ethernet, Wi-Fi, 4G LTE, GNSS, LoRaWAN, 915MHz	Wall mounting	DIN rail mounting
GLR200-CN	Ethernet, 4G LTE, GNSS, LoRaWAN, 490MHz	Wall mounting	DIN rail mounting

Packing list			
GLR200 LoRaWAN gateway	1	LoRa antenna	1
12V 1A DC power adapter & power cord	1 kit	NA: 4G LTE antenna / 4G LTE + Wi-Fi antenna	2
DC power connector	1	China: 4G LTE antenna	1
Debugging cable	1	GNSS antenna	1

Since its establishment in 2002 by two Silicon Valley entrepreneurs, Vantron Technology has been at the forefront of the connected IoT devices and IoT platform solutions. Today, Vantron boasts a global customer base that includes Fortune Global 500 companies. Its product lines cover edge intelligent hardware, IoT communication devices, industrial displays and BlueSphere cloud device management platform.

Vantron offers IoT communication devices that enable multi-protocol connections for industrial equipment and local data processing through edge computing. With abundant wired and wireless connectivity options, remote operations and maintenance have become easier than ever. Such devices can be deployed across different sectors such as smart retail, medical and warehousing. Moreover, Vantron's IoT solutions are designed to facilitate enterprises' digital transformation, streamline operations, enhance productivity, etc.