GLR200-R Rugged LoRaWAN Gateway

Product Brief

Vantron GLR200-R is a fully rugged, IP65-rated LoRaWAN gateway designed to withstand harsh environments. The gateway supports the LoRa physical layer technology and complies with the LoRaWAN 1.0.3 specification to ensure reliable data transmission. Operating with high receiver sensitivity, it facilitates long-range wireless connectivity while consuming less than 5W of power under load.

GLR200-R features 8 frequency channels and 8 spreading factors from SF5 to SF12 for efficient detection and demodulation of data packets from LoRaWAN Class A and C end devices. It then forwards these packets to a LoRaWAN network server, which manages the entire LoRaWAN network. It offers two fast Ethernet ports for connection to an Ethernet switch/router and provides essential IP networking features. It also supports Wi-Fi and 4G LTE connectivity, while the multi-mode GNSS module provides precise timestamping and high-accuracy geolocation.

GLR200-R 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, digital medical, oil & gas, public security, and more.

Exterior and Features

Button view

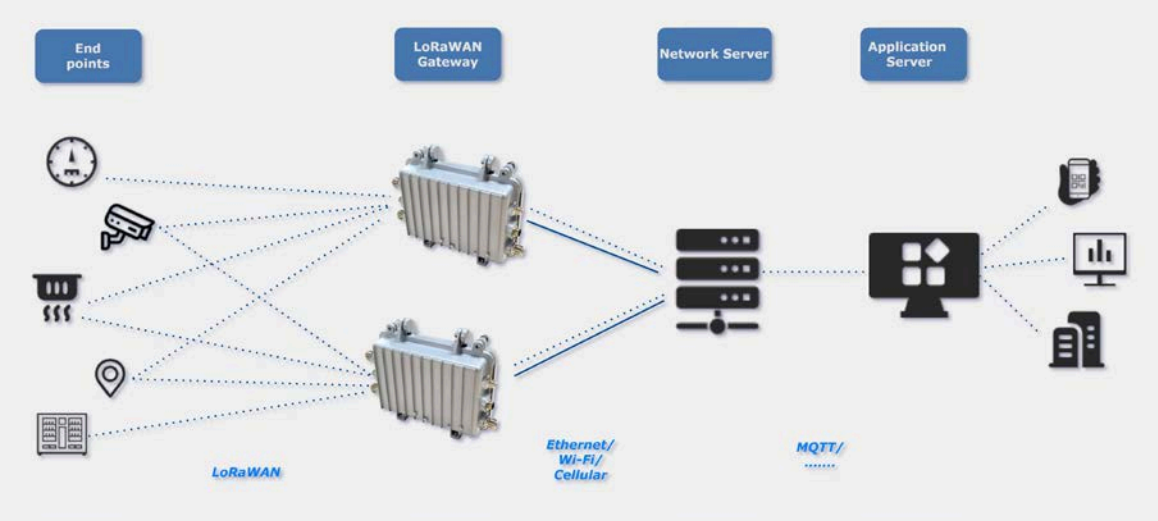
GLR200-R	
LoRa	High-performance LoRa chipset, up to -141 dBm sensitivity; 8 channels x 8 SF; ~ 22dBm TX power
	Sub-1 GHz frequency bands supported
	Up to 15km in remote areas, 5km in urban areas
	Support connection of thousands of end devices
	Ethernet, Wi-Fi, 4G LTE connectivity
	Multi-mode high-sensitivity satellite navigation
	Fully rugged, IP65 rated
	Ultra-low power consumption

GLR200-R LoRaWAN Gateway Datasheet

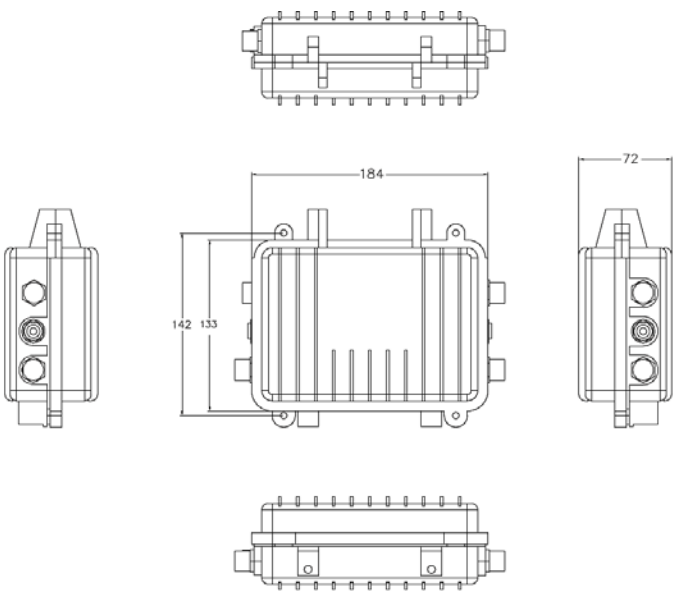
GLR200-R		
System	CPU	MIPS24KEc, 580MHz
	Memory	256MB
	SPI flash	64MB
Communication	Ethernet	1 x LAN, 100Mbps; 1 x WAN, 100Mbps
	Wi-Fi	Wi-Fi 802.11 b/g/n
	4G LTE	CAT 1
	RF	LoRa
	GNSS	BDS, GPS, GLONASS, GALILEO
LoRa Features	Frequency	470MHz, 915MHz
	Transmit power	~ 22dBm
	Bandwidth	125 kHz / 250 kHz / 500kHz
	Packet detector	8 Channels x 8 Spreading factors (SF5~SF12)
	Receiver sensitivity (Typical)	-121 dBm (at 125kHz bandwidth, SF5)
		-127 dBm (at 125kHz bandwidth, SF7)
		-141 dBm (at 125kHz bandwidth, SF12)
	Antenna impedance	50Ω
	LoRaWAN	LoRaWAN 1.0.3
		Support for Class A and C end devices
4G LTE Features	Frequency band	North America: WCDMA: B1/B2/B4/B5/B6/B8
		China: LTE-FDD: B1/B3/B5/B8
I/Os	M12 connector	2 x M12 connector (WAN + DC in, LAN + RS232 debugging)
	Internal SIM slot	1 x Internal Micro SIM slot
	Antenna	1 x LoRa antenna, N-type (gain: 2.0dBi)
		1 x GNSS antenna, N-type
		2 x 4G LTE / 1 x 4G LTE + 1 x Wi-Fi antenna, N-type
System Control	Internal LED indicator	1 x Power indicator
		1 x LoRa communication indicator
		1 x Network status indicator
		1 x System status indicator
	Internal button	1 x Restore button (1~5s: Restart the device; > 5s: Factory reset)
Mechanical	Enclosure	Aluminum
	Dimensions	184mm x 133mm x 72mm (enclosure only)
	Installation	Pole mounting
	IP rating	IP65
Power	Input	12V/1A DC
		3-pin DC input for power included in an M12 connector
	Consumption	< 5W (load)

GLR200-R		
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



Product Outlines



Ordering Information

Ordering No.	Description	Installation
GLR200-R-NA	Ethernet, 4G LTE, GNSS, LoRaWAN, 915MHz, IP65	Pole mounting
GLR200-R-WLAN-NA	Ethernet, Wi-Fi, 4G LTE, GNSS, LoRaWAN, 915MHz, IP65	Pole mounting

Packing list			
GLR200-R-NA LoRaWAN gateway	1	LoRa antenna	1
12V 1A DC power adapter & power cord	1 kit	4G LTE / 4G LTE + Wi-Fi antenna	2
M12 cable tubing	2	GNSS antenna	1
Mounting bracket (with M6 bolts)	1	Mounting strap	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.