G405 Edge Computing Gateway

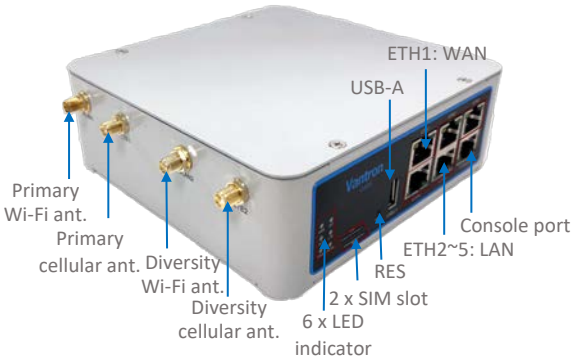
Product Overview

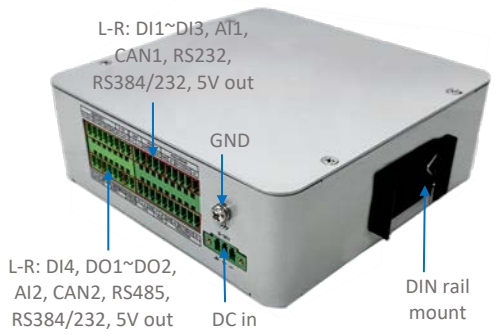
Vantron G405 industrial edge computing gateway is an Arm®-based high-performance solution built for industrial applications. The gateway features dual-SIM 4G connectivity, Wi-Fi, bluetooth, five Ethernet jacks, while supporting virtual private network (VPN) to address diversified networking requirements. It also offers multiple DI, DO, and AI channels for status monitoring, control, and data visualization.

G405 features edge computing capabilities, enabling data processing and analysis directly at the edge for faster decision-making. It supports various southbound protocols, including Modbus TCP, Modbus RTU, EtherNet/IP, ISO-on-TCP, and CC-Link, ensuring seamless communication with industrial devices. The MQTT northbound protocol allows for flexible transfer of edge data to cloud servers. Meanwhile it supports interfacing with prevailing cloud platforms, including the self-developed BlueSphere GWM platform, for remote management to ease the efforts of users by real-time monitoring, OTA updates, remote maintenance, and task assignment.

Industrial interfaces such as RS232, RS485, DI, DO, AI, and CAN FD enable communication with a wide range of peripherals, while the DIN rail mount offers compact and efficient space utilization in cabinets, automation systems, and industrial control panels. G405 is an ideal solution for industrial applications such as industrial automation, grid infrastructure, and water management.

Exterior and Features





G405	
	Low power, complete industrial design
	DI/DO/AI, isolated CAN FD & RS232, RS485
	Five gigabit ETH, dual SIM backup, Wi-Fi, Bluetooth
	Southbound and northbound protocols for data transfer
	Local edge computing support
SDK	SDK available with system-level API
	Optional BlueSphere GWM support for remote control
	Industrial extended temperature and input voltage
	Space-efficient design for flexible installation

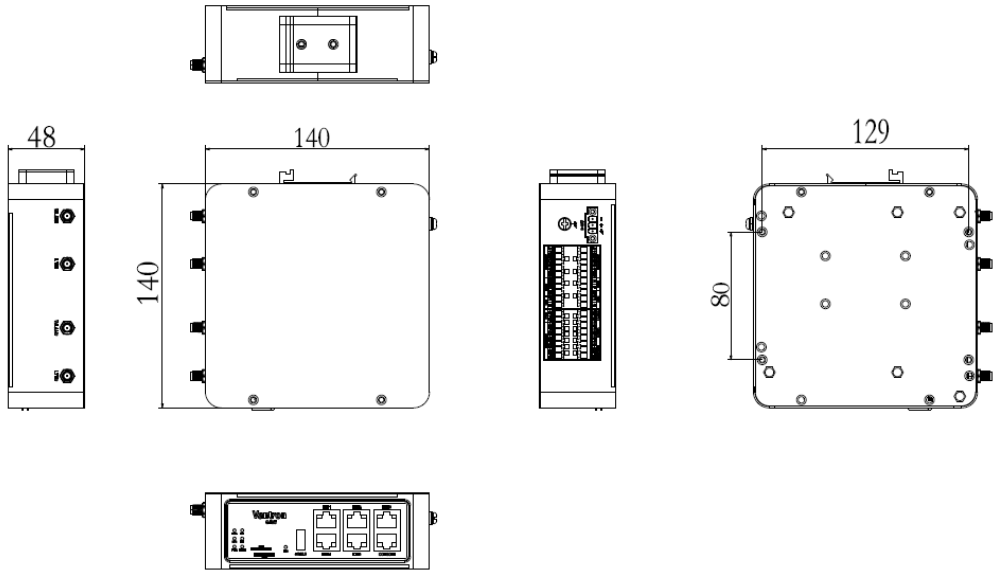
G405 Edge Computing Gateway Specifications (Hardware)

G405			
System	CPU	Single-core 64-bit Arm Cortex-A53 microprocessor, 1.0GHz (Max.) Dual-core Arm Cortex-R5F MCU, 800MHz (Max.) Single-core Arm Cortex-M4F MCU, 400MHz (Max.)	
	Memory	1GB DDR4	
	Storage	16GB eMMC	
Cellular	Modem	4G LTE, CAT 4	
	SIM	2 x Micro SIM slot	
	Antenna	2 x Antenna (SMA-K connector)	
Ethernet	Port	5 x RJ45, 10/100/1000Mbps	
	Configuration	1 x WAN + 4 x LAN	
Wi-Fi	Standard	IEEE 802.11 b/g/n/ac	
	Frequency band	2.4GHz, 5GHz	
	Working mode	AP, Station	
	Antenna	2 x Antenna (RPSMA-K connector)	
	Security	AES, WPS	
Bluetooth	Bluetooth	Bluetooth 5.2	
I/O	Serial port	1 x RS232 (isolated), Max. 200kbps	1 x RS485 (isolated), Max. 500kbps
		2 x RS232/RS485 (isolated), Max. 250kbps	1 x 5V output
	USB	1 x USB 2.0 Type-A	
	DI	4 x DI (dry / wet contact)	
	DO	2 x DO, 5A @30V DC	
	AI	2 x AI (measurement signal: 0~20mA or 4~20mA / 0~10V or 0~5V)	
	CAN	2 x CAN FD (isolated)	
	Debug	1 x RJ45 console port (Baud rate: 115200)	
System Control	Button	1 x Restore button (≤ 3s: restart; 5-8s: factory reset)	
	LED indicator	1 x Power indicator	1 x Internet indicator
		1 x Status indicator	1 x 4G LTE indicator
		1 x Error indicator	1 x WLAN indicator
	Watchdog timer	Hardware watchdog	
	RTC	Supported	
Power	Input	9V~36V DC	
	Socket	1 x 3-pin x 3.81mm	
	Protection	Over-current protection, Reverse polarity protection	
Physical Characteristics	Dimensions	140mm x 140mm x 48mm	
	Enclosure	Metal	
	Weight	841g (not including accessories)	
	Installation	DIN rail mounting	
	IP rating	IP40	
	Cooling mode	Heat sink	
	Mechanical test	Drop: IEC60068-2-32	Shock: IEC60068-2-27
		Vibration: IEC60068-2-6	
EMC	ESD	IEC 61000-4-2 (Contact: 6kV, Air: 8kV)	
Environmental Condition	Temperature	Operating: -40℃ ~ +80℃	Storage: -40℃ ~ +85℃
	Humidity	5%-95% RH (non-condensing)	
Certification	Compliance	FCC, ISED, CE	
	Carrier certification	AT & T, Verizon, T-Mobile	

G405 Edge Computing Gateway Specifications (Software)

G405			
Edge Computing	Edge computing script	JavaScript, MicroPython	
	Southbound protocol	Modbus TCP, Modbus RTU, EtherNet/IP, ISO-on-TCP, CC-link, etc.	
	Northbound protocol	MQTT	
Custom Development	IPK import	Supported	
	Documentation support	SDK available, API documentation	
Device Management	Operating system	Web-based VantronOS	
	Configuration	VantronOS, SSH, console port, cloud-based BlueSphere GWM (Optional)	
	Remote management	BlueSphere GWM (Optional)	
	Upgrade	VantronOS, BlueSphere GWM (Optional)	
Routing & Network Reliability	Network protocol	IPV4, HTTPS, TCP & UPD, NTP client and server, ARP, TLS	
	Link detection & report	Address: IP, URL	Protocol: ICMP, TCP, HTTP
	Failover	Auto routing, Auto reconnection	Network priority: Ethernet > Wi-Fi client > Cellular (def.)
	Dual SIM	Dual SIM failover, automatic switch	
	NAT	Dynamic, Static	
	WAN protocol	DHCP client, PPPoE, Static IP	
	Network management	SNMP v1/v2c/v3	
	IP application	Ping, Traceroute, Nslookup, DHCP Server/Client, DDNS	
	IP routing	Static routing	
Network Diagnostics	Network capture	By time or packet count	
	Statistics	Traffic data and up time at Ethernet WAN, Wi-Fi client WAN, cellular WAN Cellular and Wi-Fi signal strength; SIM card switch frequency	
	Health check	Usage of CPU, memory, disk Service running status Alarm on Ethernet/Wi-Fi/cellular hardware abnormality	
	Log	System log, diagnostic log	Log export supported
Security	Firewall	Stateful, whitelist control, port mapping	
	Access control	MAC address filtering, IP address filtering	
	VPN	PPTP, L2TP, GRE, IPSec, OpenVPN	
	Firmware validation	SHA256 checksum	

Product Outlines



Ordering Information

Ordering No.	Memory	Storage	Ethernet	Description
G405	1GB	16GB	1 x WAN, 4 x LAN	RS232, RS485, CAN FD, DI, DO, AI, IP40

Packing list	
G405 Edge computing gateway	1
Wi-Fi antenna	2
4G LTE antenna	2
I/O mating connector	4
DC power connector	1

Optional accessories	
12V DC Power adapter	1
Power cord	1

Since 2002 established by two Silicon Valley entrepreneurs, Vantron Technology has been a pioneer in connected IoT devices and IoT platform solutions. Today, Vantron is serving customers all over the world, including many Global Fortune 500 companies. The product lines cover intelligent edge hardware, IoT communication devices, industrial displays and the cloud-based BlueSphere 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.