# R102 Industrial Router

Product Brief

Vantron R102 industrial wireless router is designed for industrial IoT applications, offering dual SIM support to ensure uninterrupted connectivity by seamlessly switching between different cellular networks. It integrates auto-routing and failover mechanisms that optimize network performance by efficiently transitioning between Ethernet, Wi-Fi, and 4G connections to maintain operational continuity. The firewall rigorously inspects network packets using whitelist control and ingress/egress filtering, effectively safeguarding against unauthorized access and potential threats. Additionally, users can seamlessly onboard the router onto Vantron BlueSphere cloud platform for remote management. This facilitates real-time monitoring, remote maintenance, OTA updates, and more.

R102 features high stability, reliability, and ease of networking deployment. It is particularly suited for large-scale distributed networking in diverse scenarios such as intelligent business applications, smart city infrastructure, intelligent security systems, and environmental protection devices. This versatility makes it a valuable choice for reliable connectivity solutions in demanding industrial environments.

Applications

Smart Farming	Smart City	Smart Home	Smart Water
Industrial Automation	Retail and Self-service	Security and Surveillance	Energy and Power

Typical Topology

CCTV

Industrial Controller

Central Application

Barcode Scanner

LTE

BlueSphere — Vantron BlueSphere GWM

R102

EV Charger Station

Industrial PLC

Managed Service Provider
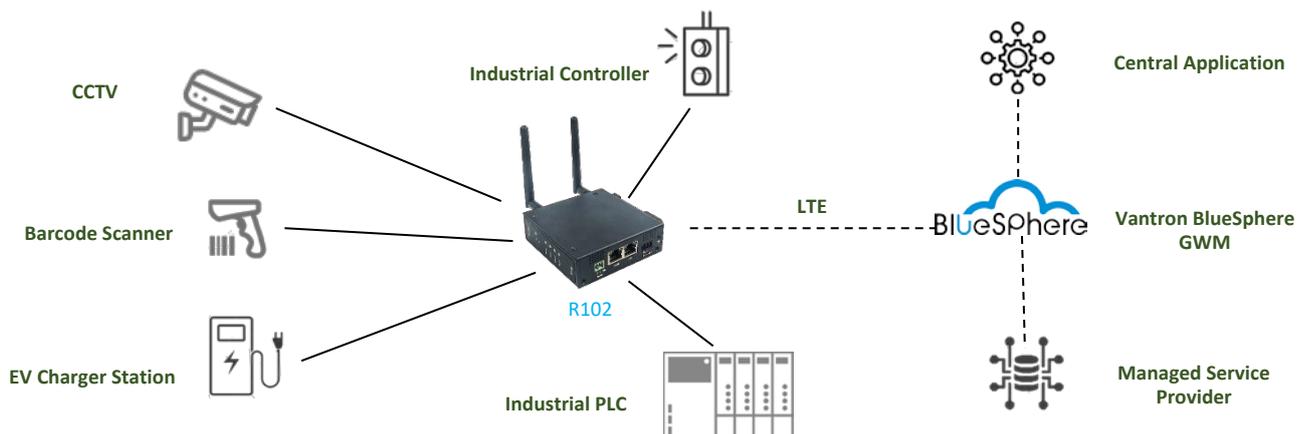
R102 Industrial Router Specifications (Hardware)

| R102				
System	CPU	MIPS24KEc, 580MHz		
	Memory	128MB DDR2		
	Flash	32MB		
Cellular	Modem	CAT 4/M, multi-carrier supported		
	SIM	2 x Micro SIM slot		
	Antenna	2 x Antenna (SMA-K connector)		
Ethernet	Port	2 x RJ45, 10/100Mbps		
	Configuration	1 x WAN + 1 x LAN		
Wi-Fi	Standard	IEEE 802.11 b/g/n		
	Frequency band	2.4GHz		
	Working mode	AP, Station		
	Antenna	2 x Antenna (RPSMA-K connector)		
	Security	64/128 bits WEP, TKIP, WPA, WPA2, WPA3, AES, WPS		
I/Os	Serial port	1 x RS485	Socket: 1 x 3-pin x 3.81mm	Baud rate: 115200 (def.)
Power	Input	9~36V DC		
	Socket	1 x 3-pin x 3.81mm		
	Protection	Over-current protection, reverse polarity protection		
	Consumption	Full load: 600mA @12V DC		
System Control	LED indicator	1 x Power indicator	1 x WLAN indicator	
		1 x Internet indicator	1 x System indicator	
		3 x Cellular signal strength indicator		
	Button	1 x Pinhole reset button		
Physical Characteristics	Dimensions	93.8mm x 93.3mm x 29mm		
	Enclosure	Metal		
	Installation	DIN rail mounting, panel mounting, wall mounting		
	IP rating	IP30		
	Cooling mode	Fanless		
EMC	Static	EN61000-4-2 level 3		
	RF electromagnetic field immunity	EN61000-4-3 level 3		
Environmental	Temperature	Operating: -20℃~+60℃	Storage: -40℃~+70℃	
	Humidity	Storage: 5%~95% RH (non-condensing)		
Certification	Compliance	FCC, ISED, PTCRB, UL, SRRC		
	Carrier certification	AT & T, Verizon, T-Mobile		

R102 Industrial Router Specifications (Software)

Device Management	Operating system	Web-based VantronOS	
	Configuration	VantronOS, SSH, cloud-based BlueSphere GWM (Optional)	
	Remote management	BlueSphere GWM (Optional)	
Routing & Network Reliability	Network protocol	IPV4, HTTPS, TCP & UPD, NTP client & server, ARP, TLS	
	Link detection & report	Address: IP, URL	Protocol: ICMP, TCP, HTTP
	Failover	Auto routing	Network priority: Ethernet > Wi-Fi client > LTE/5G
	Dual SIM	Dual SIM failover, automatic switch	
	NAT	Network address translation Supported	
	WAN protocol	DHCP client, PPPoE, Static IP	
	Network management	SNMP v2c/v3	
	IP application	Ping, Traceroute, DHCP Server/Client, DDNS	
	IP routing	Static routing	
Network Diagnostics	Packets filtering	VTShark (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, ingress/egress filtering	
	Access control	MAC address filtering, IP address filtering	
	VPN	PPTP, L2TP, GRE, IPSec, OpenVPN	
	Firmware validation	SHA256 checksum	

Exterior and Features

3 x Signal strength indicator
4 x System indicator
RS485
2 x Ethernet port
Power terminal

2 x LTE antenna
WLAN antenna
WLAN antenna
Reset
2 x SIM slot
TF card slot
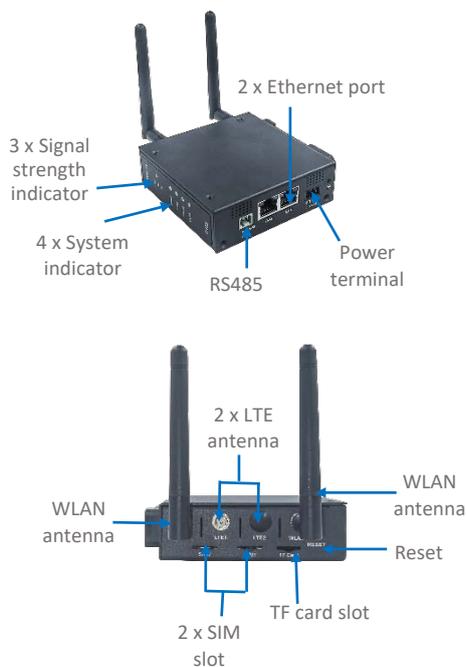
R102
LTE CAT M/4 supported
Dual Ethernet ports rating 10/100Mbps
Dual SIM hot spot, multi-channel failover
Multiple VPN functions
Vantron BlueSphere GWM for remote management
Industrial design to adapt to rugged conditions
Compact size and flexible installation for varying sites

Product Outlines
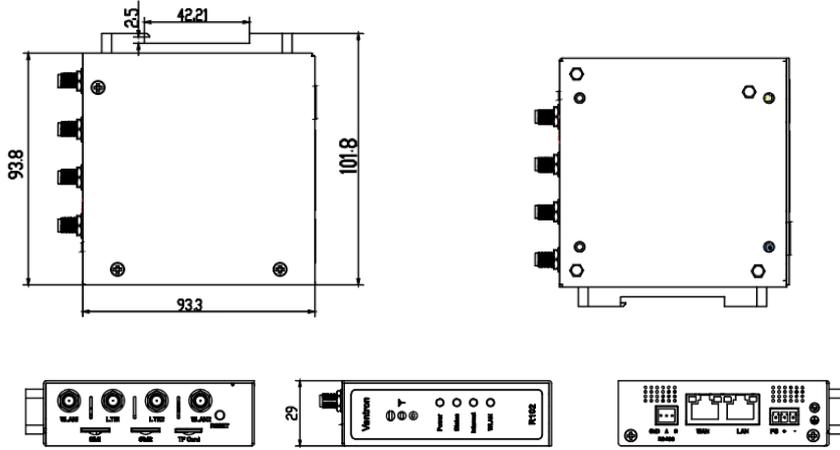
Ordering Information

Ordering No.	4G LTE	4G LTE Antenna	Wi-Fi Antenna	DIN rail mount	Wall mount
R102-FMNA	CAT M	Yes	Yes	Yes	Yes
R102-F4NA	CAT 4	Yes	Yes	Yes	Yes

Packing list	
R102 Industrial router	1
Wi-Fi antenna	2
4G LTE antenna	2
DC Power connector (Female)	1
Serial port connector (Female)	1

Optional accessories	
12V DC Power adapter	1
Power cable	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.

With more than 20 years of experience in R&D of embedded intelligent edge hardware like SOMs and motherboards, Vantron provides users with various ARM- or X86-based embedded solutions. Such solutions provide users with flexible options, from Linux to Windows, from embedded level to desktop level, from gateways to servers. In the meantime, we also offer system clipping, driver transplantation and other services for custom development.