Bivocom®

VG465 Series

Programmable 5G/4G CAN FD/CAN Gateways

3-GbE+CAN FD/CAN+WIFI+GPS+Bluetooth+RS232+USB

Key Features

- ✓ Quad-core 64-bit ARM Cortex-A55 up to 2GHz
- ✓ NPU up to 1 TOPS, ARM G52 2EE GPU
- ✓ 8GB RAM (DDR4) and 64GB Flash(eMMC)
- ✓ Openwrt Linux OS with Python/C/C++ programmable, or Unbuntu, docker container, flexible for secondary development[1]
- ✓ 5G NR or 4G LTE to choose, Dual SIM[2]
- ✓ LCD screen, 3-RJ45(GbE), 1-CAN FD/CAN, WIFI6, Bluetooth, GPS, 6 programmable buttons, 2-RS232(1-Debug) 1-USB2.0, 1-USB3.0, 1-TF
- ✓ Power input: 5-60VDC
- ✓ MQTT broker/client, Modbus RTU/TCP, JSON, TCP/UDP, OPC UA, IEC101/104 and VPN[3]

Introduction

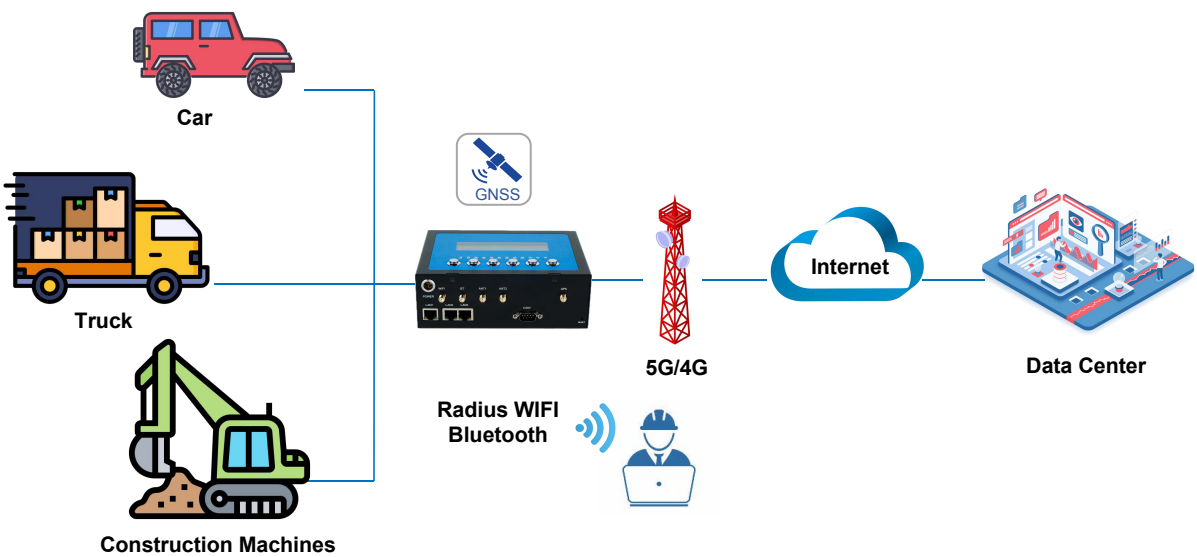
The VG465 is an innovative and smart 5G/4G programmable edge gateway designed for automotive industry to diagnose vehicle Electronic Control Units (ECUs) remotely. Powered by an ARM A55 Quad-core 64-bit processor and boasting 8GB of RAM, along with 64GB of FLASH storage, this device is primed to meet the demands of remote monitoring of in-vehicle networking.

Featuring a user-friendly LCD screen, 6 programmable buttons, and a robust set of connectivity options — including 3 RJ45 gigabit Ethernet ports, CAN FD/CAN 2.0B, WiFi, Bluetooth, and GPS — the VG465 offers seamless integration and operation. It also includes 2 RS232 ports (with 1 dedicated for debugging), 1 USB 2.0, 1 USB 3.0, and a TF slot supporting up to 32GB of data storage.

With a wide power input range of 5-60VDC, the VG465 is equipped to handle the rigors of vehicle applications. Its operating system, based on OpenWrt Linux, supports C/C++ and Python SDKs for streamlined development. Alternatively, it can run on Ubuntu with Docker container support.

Moreover, the VG465 comes with a rich array of protocols including MQTT broker/client, Modbus RTU/TCP, JSON, TCP/UDP, SNMP, OPC UA, IEC 101/104, and VPN. These protocols allow for versatile and secure communication, tailor-made to meet your monitoring needs.

Applications



Specifications

System

- **CPU** ARM Cortex-A55, 64-bit, quad-core
- **RAM** DDR4, 8GB
- **Flash** eMMC, 64GB
- **NPU** 512MAC , up to 1 TOPS
- **GPU** Mali-G52, OpenGL ES 1.1/2.0/3.2, OpenCL 2.0, Vulkan 1.1

Cellular Interfaces

- **Antenna Connector** 4 × 50 Ω SMA Female(5G Version VG465-NR)
2 × 50 Ω SMA Female(4G Version VG465-LF)
- **SIM Slot** 2 x Micro SIM[4]
- **ESD Protection** 15KV

Ethernet Interface

- **Ports** 3-RJ45 (1-WAN, 2-LAN or 3-LAN configurable)
- **Data Rates** 10/100/1000 Mbps (Auto-Sensing), Auto MDI/MDIX
- **ESD Protection** 1.5KV

CAN FD/CAN

- **Connector** 9-Pin D-SUB, Male
- **Standard** Conforms to ISO 11898-1:2015
CAN 2.0 B and FD
Arbitration Bit Rate up to 1 Mbps
Data Bit Rate up to 5 Mbps

Serial Interfaces

- **Connector** Terminal block, 3.5 mm female socket
- **Ports** 2-RS232(1-Debug),
- **Baud Rate** 300bps to 230400bps
- **ESD protection** 8KV

Bluetooth

- **Standard** BT 5.0
- **Connector** 1 × 50 Ω RP-SMA Female

Wi-Fi

- **Antenna Connector** 1 × 50 Ω RP-SMA Female
- **Standard** 802.11 a/b/g/n/ac/ax, AP and Client modes
- **Security** Open, WPA, WPA2, WPA/WPA2 Enterprise, Radius

GPS

- **Module** Independent GPS module
- **Antenna Connector** 1 × 50 Ω SMA Female

LCD Display

- **Dot Matrix** 160 × 32 Dots
- **LCD Mode** STN

External Storage

- **TF Card Slot** 1x Micro SD interface, Up to 32G
- **USB** 1x USB3.0, 1x USB2.0
- **Usage** User Program, Data Storage and Firmware Upgrade

Power Input

- **Connector** 2 Pin EGG 1B LEMO
- **Standard Power** DC 12V/1.5A
- **Input Voltage** 5-60 VDC

Software

- **Network Protocols** PPP, PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, RIPv1/v2, OSPF, BGP, DNS, DDNS, HTTP, ARP, QoS, SNTP, Telnet, SSH
- **Industrial Protocols** MQTT client/broker, Transparent (TCP/UDP Client/Server), Modbus RTU/TCP, OPC UA, IEC101/104, DL/T645-2007, PLC(S7, FP) [5]
- **VPN Tunnel** IPsec/PPTP/L2TP/GRE/OpenVPN
- **Firewall** ACL/DMZ/Port Mapping/MAC Binding
- **Management** Web, CLI, SMS, Cloud DMP (Device Management Platform)[6]
- **Reliability** Dual SIM, WWAN and WAN Failover, Hardware & Software Watchdog
- **Secondary Development** OpenWrt based Linux OS, C/C++, Python SDK; or Ubuntu, Docker container

Physical Characteristics

- **Ingress Protection** IP30
- **Housing & Weight** Metal, 1051g(2.32lbs), without accessories
- **Dimensions** 173x126.7x60.5mm (6.81 x 4.96 x 2.38in)
- **Mounting** Desktop

Environmental

- **Operating Temperature** -20° C to +60° C (-4°F to +140°F)
- **Storage Temperature** -30° C to +70° C (-22°F to +158°F)
- **Relative Humidity** 5% to 95% (non-condensing)

Others

- **Reset Button** 1
- **Programmable Button** 6
- **LED Indicators** 12 (SYS, 4G, WIFI, GPS, BT, CAN1, ETH1, ETH2, ETH3, 3 Reversed)
- **Built-in** Watchdog, RTC, Timer
- **Approvals**[7] CE*, RCM*, FCC*
- **Warranty Period**[8] Standard: 12 Months; Extended: 2-5 Years

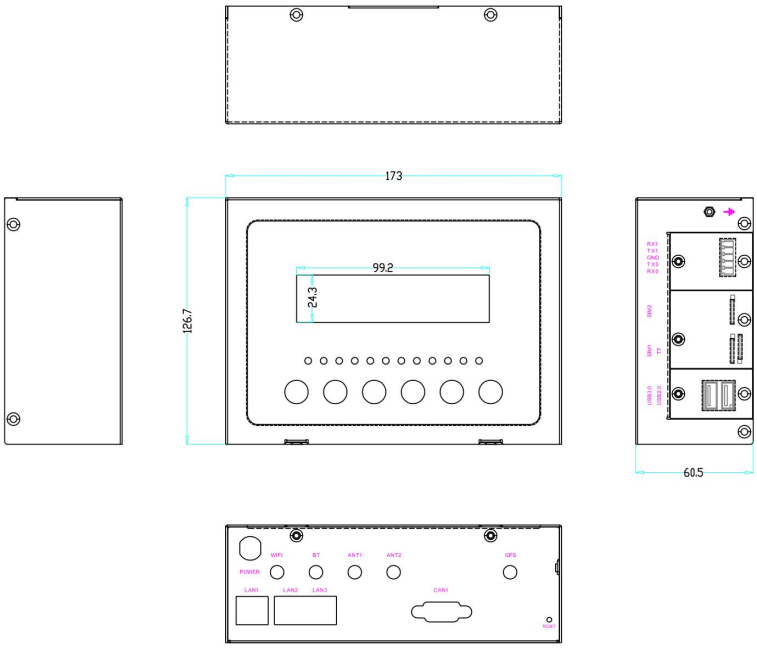
Standard Package Content

1.	VG465 Gateway	1 PCS
2.	Cellular Antenna	5G Version: 4 PCS 4G Version: 2 PCS
3.	WIFI Antenna	1 PCS
4.	Bluetooth Antenna	1 PCS
5.	GPS Antenna	1 PCS
6.	Ethernet Cable(1 meter)	1 PCS
7.	5-Pin Terminal Block	1 PCS
8.	RS232 Cable(DB9 Female, 1 meter)	1 PCS

Order Information

Model	Part Number	Description	Frequency Band[9]
VG465-NR	VG465 - N<1><2> - <3>	5G IoT Gateway, Dual SIM, 3-RJ45(GbE), 1-CAN FD/CAN, WIFI, Bluetooth, GPS, 2-RS232(1-Debug) 1-USB2.0, 1-USB3.0, 1-TF	5G NR Sub-6 • n1/n2/n3/n5/n7/n8/n12/n20/n28/n41/n66/n71/n77/n78/n79 • LTE FDD:B1/B2/B3/B4/B5/B7/B8/B9/B12/B13/B14/B17/B18/B19/B20/B21(TBD)/B25/B26/B28/B29/B30/B32/B66/B71 • LTE TDD: B34/B38/39/B40/B41/B42/B43/B48
VG465-LF	VG465 - L<1><2> - <3>	4G IoT Gateway, Dual SIM, 3-RJ45(GbE), 1-CAN FD/CAN, WIFI, Bluetooth, GPS, 2-RS232(1-Debug) 1-USB2.0, 1-USB3.0, 1-TF	4G LTE CAT 4 • EMEA/Asia: B1/B3/B5/B7/B8/B20/B38/B40/B41 • ANZ/LATAM: B1/B3/B5/B7/B8/B28 • NA: B2/B4/B5/B12/B13/B14
Option features: <1>: 5G or 4G module for different countries and regions <2>; DS=Dual sim single module <3>: W=2.4G WIFI, W6=WIFI 6 G=Independent GPS module BT=bluetooth			

Dimensions (173x126.7x60.5mm)



Related Products

5G Smart IoT Gateway
TG465 Series

- ✓ Quad-core 64-bit ARM Cortex-A55
- ✓ RJ45(GbE),1-RS232, 6-RS485, 3-DI, 2-Relay, 1-USB3.0, 1-TF, WIFI6, HDMI
- ✓ OpenWrt based Linux OS, Ubuntu, C/C++, Python programmable

5G NR IoT Gateway
TG453 Series

- ✓ 5G NR NA/NSA dual mode
- ✓ Serial and Gigabit ethernet ports, with mainstream industrial protocols
- ✓ OpenWrt based Linux OS, C/C++, Python programmable

Note:
1. Customized firmware or SDK may be required.
2. There are different modules for different regions to choose.
3. Some protocols may require customized firmware.
4. DSSM=dual sim on single module, supports failover.
5. Customized firmware may be required.
6. There has a license fee for DMP.
7. * Under progress
8. Price of the extended warranty will be different.
9. If you couldn't find the frequency band for your regions or have any questions, please contact Bivocom sales representatives for more information.
10. To save the earth, Bivocom doesn't print the user guide, if you need it, please go to Bivocom website to download.

P: +86 158 8026 2905
E: sales@bivocom.com