

G51-M5 5G High Speed Broadband Router

Introduction

G51-M5 5G High Speed Broadband Router is a kind of internet of things wireless communication router. It uses Sub6 5G/LTE-FDD/LTE-TDD/HSPA+ industrial module, to provide convenient and high speed network transmission function.

This series of product uses industrial grade high performance MIPS1004Kc Dual Core communication processor, and embedded real-time operation system as software supporting platform. It provides safe, stable, high speed 5G/4G wireless network, and provides 4 gigabit Ethernets, RS-485/232 and 2.4G/5G WIFI interface.

It can be used in bus Wi-Fi, finance, postal, smart power grids, smart transportation, environment monitor, fire protection monitor, security, water conservancy, public safety, advertising release, industrial control, earth quake monitor, meteorological watch, instrument monitor.etc



Features

Industrial design

- Use high performance industrial wireless module
- Use high performance industrial MIPS Dual Core processor
- Support low power consumption, include sleep mode, timing online and offline mode, timing switch on and off mode
- Use plate metal CRS shell, with good heat dissipation
- Power supply : +7.5V~32V DC(48V DC extendable)
- Degree of protection: IP34(can be extended to IP51)

Network characteristic

- Port flow detection
- Link real time monitoring
- Multiple VPN protocol(PPTP, L2TP, IPSec, GRE, VPN)
- Support serial port DTU function
- Support dial as required(audio, SMS, data trigger)
- Support UPnP

Stability

- Soft and hardware watchdog and multilevel link detection, with the capability of fault automatic diagnosis and automatic recovery, to ensure device working on stable and safe way
- Multiple-mechanisms of equipment self-checking, to ensure link unimpeded and alarming
- ESD protection for each port, to prevent static shock
- Wireless network signal indicator light(NET)

Software

- HOMTECS OS
- OEM OS
- OpenWRT OS

Remote management

- Remote parameter configuration
- Remote parameter backup
- Remote reboot and log query
- Remote upgrading
- Remote online monitoring

Functions

- Support Sub6 5G, 4G(FDD and TDD) LTE network, down compatible for 3G network
- Support 4x gigabit Ethernets, provide RS-232 / RS-485
- Support wire and wireless backup
- Support hardware WDT, provide anti-log off mechanism to ensure data terminal online forever
- Support PPTP, L2TP, GRE etc. multiple VPN
- Support SNMP management protocol
- Support Wi-Fi forced AD pushing function
- Support multiple functions (DHCP, DDNS, firewall, NAT, DMZ host etc.)
- Support ICMP, TCP, UDP, Telnet, FTP, HTTP, HTTPS etc.
- Industrial Industrial Dual SIM/UIM Card design.
- Support dual band WIFI(IEEE802.11n / 802.11ac)

Extended functions

- Support WAN, wireless and wire backup/failover **【optional】**
- Single module dual SIM **【optional】**
- GPS/Beidou orientation **【optional】**
- USB internal storage extension, 8GB-256GB **【optional】**

Specification

Wireless

| | |
|----------------------|--|
| Wireless module: | Industrial grade |
| Bands: | 5G Band: N1/N2/N3/N5/N7/N8/N12/N20/N25/N28/N40/N41/N66/N71/N77/N78/N79 FDD-LTE Band: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/ B30/B32/B66/B71 TDD-LTE Band: B34/B38/B39/B40/B41/B42/B43/B48 |
| Theory bandwidth: | 900Mbps UL; 2.1Gbps DL |
| Transmitted power: | <23dBm +/-1dB @25°C |
| Consumption: | data<850mA/12V; idle <600mA/12V(WiFi is enabled default) |
| Receive sensitivity: | <-97dBm @10MHz QPSK |

WIFI

| | |
|----------------------|---|
| Bandwidth: | IEEE802.11n/802.11ac standard, 2.4G 300Mbps / 5G 867Mbps 【optional】 |
| Security encryption: | WEP, WPA, WPA2, WPS 【optional】 |
| Transmitted power: | 17-18dBm(11g), 18-20dBm(11b), 15dBm (11n), 17-18dBm(11ac) |
| Receive sensitivity: | 2.4G: <-72dBm@54Mbps, <-64dBm@HT20 MCS7 , <-61dBm@HT40 MCS7 5G: <-64dBm@HT20 MCS7, <-61dBm@HT20 MCS7, <-55dBm@VHT80 MCS9 |

Interface

| | |
|-----------------------|---|
| LAN/WAN: | 4x Gigabit Ethernets(RJ45 port), 4x LAN or 3x LAN + 1x WAN, self-adaption MDI/MDIX, built-in electromagnetic isolation protection |
| Industrial interface: | 1 x RS232, 1 x RS485 port, apply to the collecting equipment which comes with RS485/RS232 interface |
| Indicator light: | 4 x “LAN”, “PWR”, “WLAN”, “ERR”, “NET” |
| Antenna interface: | 7 x SMA interface(5G-1; 5G-2; 5G-3; 5G-4; 5G-5; Wi-Fi-1; Wi-Fi-2) , 50ohm |
| SIM/UIM interface: | Industrial Dual SIM/UIM card design, 1.8V/3V automatic detection |
| Power interface: | 7.5V~32V interface terminals, standard DC connectors and on-board terminals, no-polarity |
| Reset: | Parameters can be restored to the factory |

Power supply

- Standard power: DC 12V/2A, non-polarity

Appearance

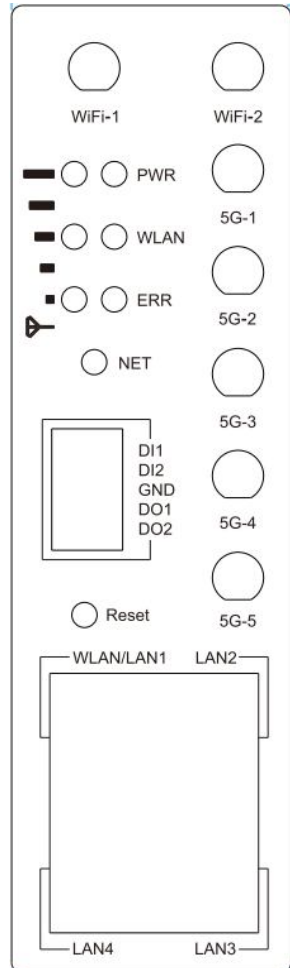
- Shell: aluminum profiles
- Dimension: 132×112×44mm
- Weight: about 400g

Others

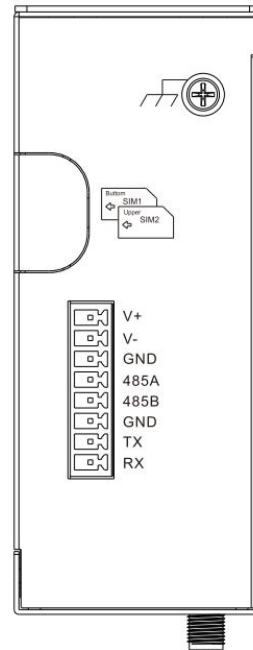
- CPU: MIPS 1004Kc Dual Core – 880MHz
- Flash/RAM: 32Mb /256Mb DDR3
- Working temperature: -30~+75℃
- Storage temperature: -40~+85℃
- Relative humidity: < 95% non condensing

G51-M5 interface graph

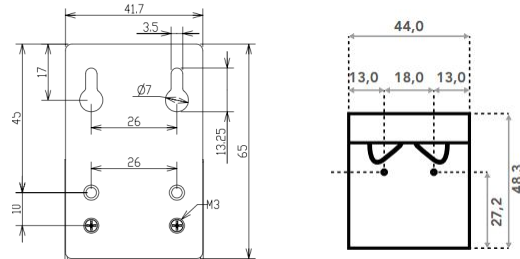
Front:



Up:

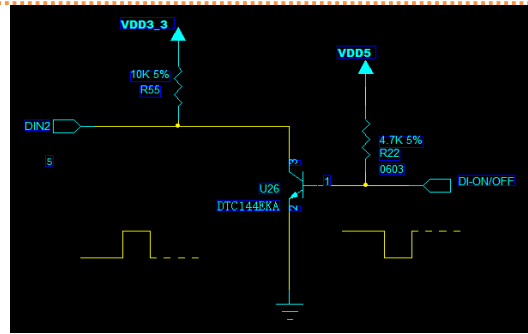
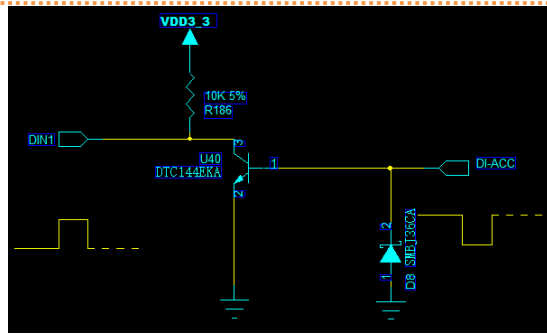


Wall/Din-rail Mounted:

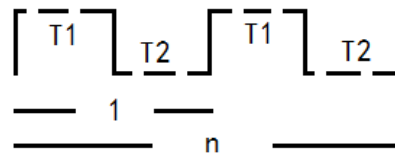
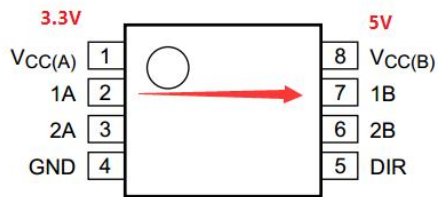

G51-M5 interface wiring instruction

| Terminal1(5PIN) | | | Terminal2(8PIN) | | |
|-----------------|-----|---------|-----------------|------|----------------------|
| 1 | DI1 | Input1 | 1 | V+ | Power input positive |
| 2 | DI2 | Input2 | 2 | V- | Power input negative |
| 3 | GND | | 3 | GND | |
| 4 | DO1 | Output1 | 4 | 485A | 485-A |
| 5 | DO2 | Output2 | 5 | 485B | 485-B |
| | | | 6 | GND | |
| | | | 7 | TX | Serial port output |
| | | | 8 | RX | Serial port input |

DI1: Openbase input, default 47 K resistance ground(input 0), can be connected to ACC ignition information
 DI2: Openbase input, default 4.7 K pull up 5 V(input 1), can be connected to the external switch quantity



DO: Digital output DO, can be used to control external drive devices, such as relay switches
 a. Relay: can be used to directly drive 5 V relays
 b. Pulse signal: can define frequency, output alarm



Technical graph

