



4G industrial router ZX4528 Specification

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Document description

The company reserves the right to modify and improve the product information described in this manual without prior notice; at the same time, it reserves the right to revise or withdraw this document at any time.

This manual is only used as a guide for use, and all statements, information and suggestions in this manual do not constitute any express or implied warranty.

Foreword

overview

This document mainly introduces the hardware and software functions of ZX4528 to facilitate readers to understand the basic information of this device.

reader

Customers who need to know the product

version

The versions of the products and specifications corresponding to the introduction of this document are as follows:

Product name	specification version
4G industrial router ZX4528 Specification	V1.0

1. Product overview

1.1 Introduction

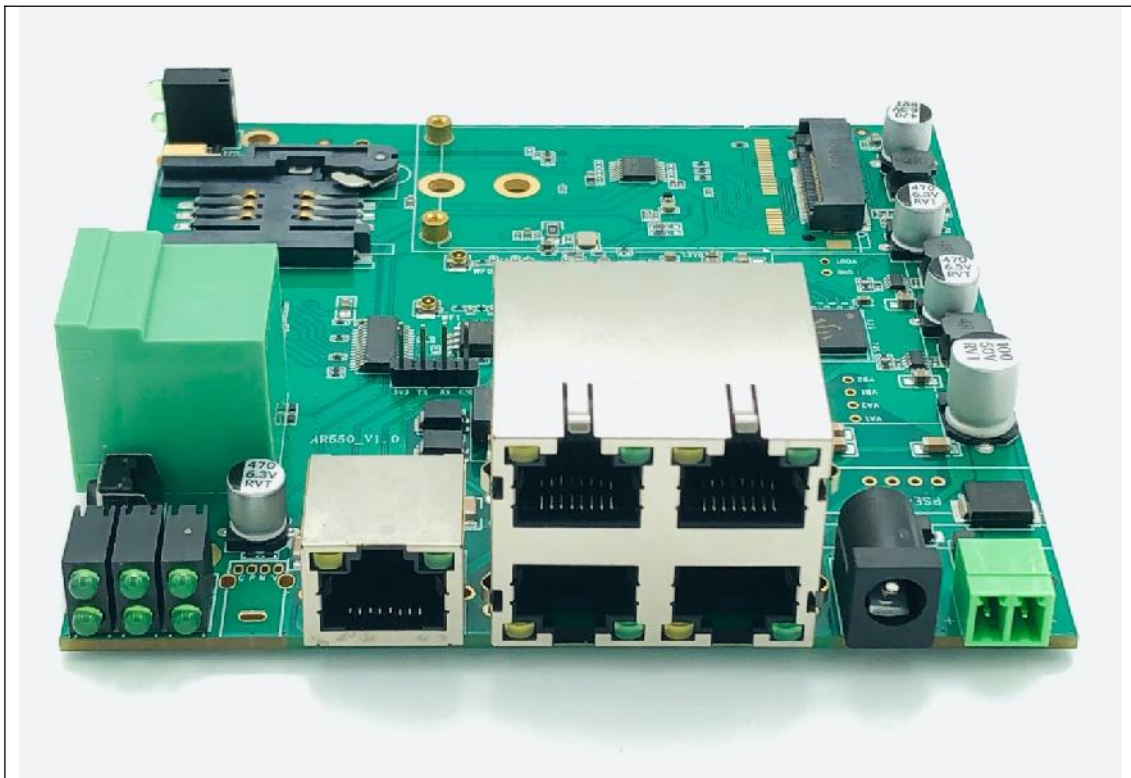
THIS ROUTER IS AN INDUSTRIAL INTERNET OF THINGS COMMUNICATION DEVICE, COMPATIBLE WITH 4G/3.5G/3G/2.5G NETWORKS ACROSS THE BOARD, WITH INDUSTRIAL-GRADE PROTECTION, WIDE TEMPERATURE, AND WIDE VOLTAGE DESIGN, IT CAN EASILY FORM A HIGH-SPEED AND STABLE Wireless transmission network. Use a public LTE network (or VPDN proprietary Network) To provide users with wireless long-distance data transmission services.

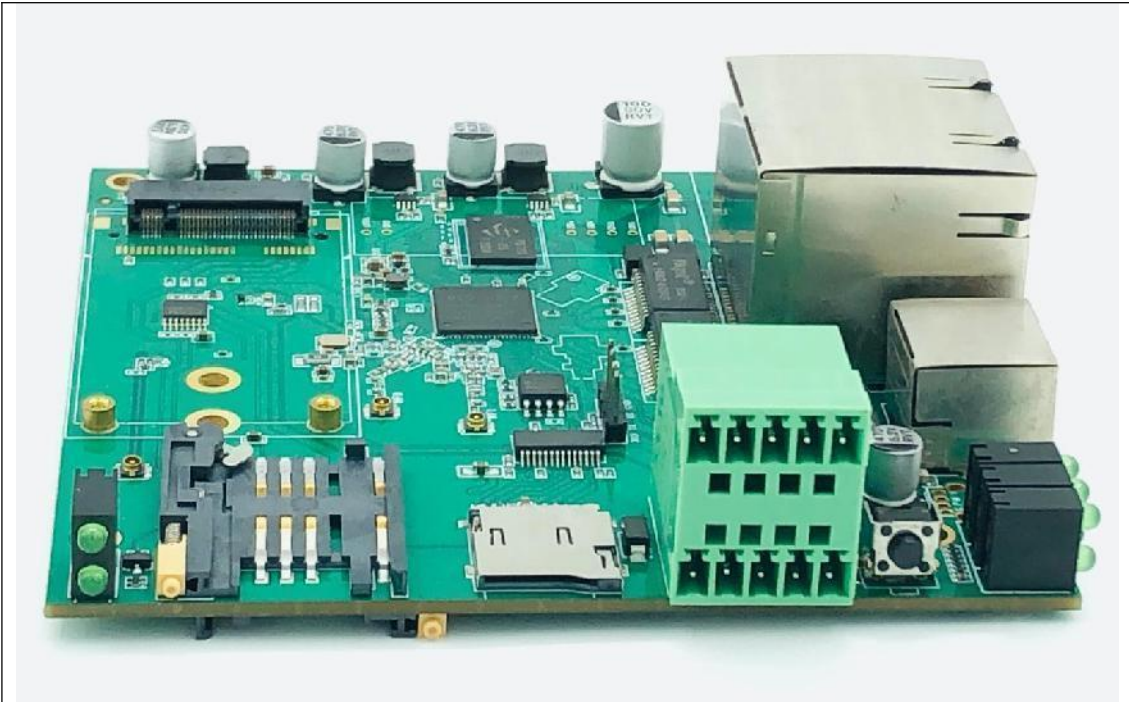
THIS ROUTER USES A HIGH-PERFORMANCE industrial-GRADE 32-BIT COMMUNICATION PROCESSOR AND INDUSTRIAL-GRADE Communication module, WITH AN EMBEDDED REAL-TIME OPERATING SYSTEM AS THE SOFTWARE SUPPORT PLATFORM, WHILE PROVIDING 1 RS232/485, 4 Ethernet LAN ports, 1 Ethernet WAN port and WIFI interface and other interfaces, Can BE CONNECTED TO serial DEVICES, ethernet DEVICES AND WIFI DEVICES AT THE SAME TIME TO ACHIEVE DATA Functions such as transparent transmission and routing.

1.2 Application area

Industrial control, electric power, petroleum, coal mining, finance, communications, public security, thermal power, meteorology, water conservancy, transportation, municipal administration and other industries that require remote data transmission.

1.3 Product illustration







1.4 Features

1. Adopts high-performance industrial-grade communication module
2. Support 3G (WCDMA/EVDO/TD-SCDMA), 4G (FDD-LTE/TD-LTE)
3. Using a metal shell, the protection level is IP30
4. Standard RJ45 (Ethernet) interface, built-in lightning protection (6000V electromagnetic 隔 isolation included)
5. Wide voltage and current input: DC5-40V/1A; ultra-high voltage automatic power-off protection
6. Anti-reverse power supply protection, anti-surge protection; ESD anti-static protection
7. The software and hardware watchdog are designed to prevent crashes. If the router freezes due to a special environment, it will automatically power off and restart to ensure the stable and reliable operation of the equipment.
8. Automatic detection of network disconnection, automatic restart if dialing fails, timed restart and other functions
9. Serial port transparent transmission function, through the serial port, you can enter the command control mode to control the router and ancillary equipment

10. Support multiple DDNS dynamic domain name services
11. Port mapping, DMZ host and other functions
12. Support VPN server PPTP Server, L2TP Server, OPENPN Server
13. Support VPN client PPTP Client, L2TP Client, Openpn Clientt
14. Support Socket server and client modes
15. Support cloud intranet penetration function
16. Base station positioning function, etc.

2、 Feature overview

2.1 Software functions

Network interconnection	
Network access	3G/4Gdial-up Internetaccess,support APN, VPDN. Built-in information of hundreds of APNS around the world, after inserting the SIM card, the router can automatically match the Internet
access authentication	, support CHAP/PAP/MS-CHAP/MS-CHAPV2/none
network standard	, support LTE/WCDMA (HSPA+)/TD-SCDMA/EVDO/EDGE/GPRS
LAN protocol	, support ARP, Ethernet,STP
WAN protocol	supports static IP, DHCP, PPPoE, PPTP, L2TP
Supports the number of users	wired: 253, wireless: 32
Network protocol	
IP applications	support Ping, Traceroute, DHCP server/wirelessrelay/client, DNS relay, dynamic domain name DDNS, Telnet, SSH, HTTP, HTTPS, TFTP, FTP, SFTP, IPv6
IP routing	supports static routing, IGMP Proxy
TTL	custom client host TTL value
, network security	
firewall	supports full-state packet detection (SPI), prevents denial of service (DDoS) attacks
	, supports filtering of multicast/Ping packets, access control form (ACL)
	DMZ, MAC filtering, whitelist/Blacklistaccess control

	supports NAT, PAT, DMZ, port mapping, virtual server
AAA	supports local authentication, Radius
data security	, supports L2TP, PPTP, OSPPN, CA
reliability	
backup function	interface backup, 4G, wired or relay disconnected network mutual backup
	dual SIM card slots to achieve automatic signal switching and dual SIM cardsThe operator's backup
link detects	the 4G status online, and automatically re-dials when the connection is disconnected or the signal is not good. When
	the 4G dual SIM card is switched, one network is disconnected and then switches to another network. The
	VPN disconnection and re-dialing interval is defined, and the number of dials is controlled
	. The WAN side sends a heartbeat detection packet to detect, and the disconnection is automatically connected
	to the timing.Restart
the bridge, multi-gateway	supports multi-LAN settings, and the router has two portals (two intranets)
. WLAN	
wireless 2.4GHz	supports IEEE 802.11b/g/n
	supports wireless area code (country/region channel) selection
	, wifi on-time control
	, SSID broadcast time control
	, support transmission power adjustment
	, single and dual antennas (150Mbps, 300Mbps rate) Control
	supports Radius authentication
	Visitor network: You can set up visitor WIFI to manage visitor Internet behavior
	Wireless bridging: You can bridge other WIFI (WDS bridging, etc.)
	Wireless access control: You can control the Internet for MAC(black and white list)
Internet of Things	
DTU	supports TCP, UDP transparent transmission mode, TCP Server mode, The command mode
	supports the data communication format between the serial port and the socket, and the switching of the ASCII, HEX, and HTTP formats
. Secondary development (edge computing)	
Python development	can develop its own Python programs to realize the project's special functional requirements for the router, and greatly shorten the time from customization to deployment.

Shell script	custom script function, implement custom management system interface for router and related functions
System interface	, router provides secondary development parameter interface (http), such as obtaining router status, setting router-related functions, etc. It is convenient for mobile phone APPS, mini programs, and cloud servers to develop
network management	
configuration methods that	support local or remote HTTP, HTTPS, Telnet, and SSH methods, and support intranet penetration.
The upgrade method	supports local or remote WEB, TFTP, FTP, SFTP server, and intranet penetration. The remote
logging function	supports local system logs and remote logs.. Important log power-down saving
	support log power-down saving

2.2 Hardware parameters

Interface		
Ethernet interface	5* 10/100Mbps Fast Ethernet interfaces, WAN/LANadaptive (4G mode for4LAN)	
Wi-Fiinterface	is optional,IEEE802. 11b/g/n	
	serial port	RS232/RS485 x1; RS232 signal:TXD,RXD,GND; RS-485 signals:A,B,GND
		RS232 x1
		5V power supply output x1, GND ground x1
		input/output GPIO x2
SIM card holder	drawer card holder x 2,	
TF card	insert TF card	
USB interface	USB 2.0 x1	
GSP	GPS x1 (optional)	
POE/PSE	POE/PSE power supply optional	
antennaconnector	SMA external rotation of the inner hole: the 3G/4G network: SMA x 2 WLAN: SMA x 2 GPS: SMA x 2	
reset button	1	
mechanical characteristics		
mounting	rail, wall hangings	
dimensions	length width height:113*105*44mm (excluding antenna interface)	

	PCBA motherboard: 105*105*35mm
housing	aluminum alloy
protection class	IP30
cooling	thermal cotton casing cooling
weight(g)	145g
power	
supply interface	DC2. 1head 2pin terminal
power input	DC 5-60V, anti-reverse protection
standby power consumption	100mA@24V(HSPA+network)
working power consumption	150mA@24V(HSPA+network)
peak power consumption	180mA@24V(HSPA+network)
reverse polarity protection	supports
Wi-Fi transmit power	
transmit power	802.11n HT20 MCS7 : +13.5 dBm 802.11n HT40 MCS7 : +13.5 dBm 802.11b CCK: +18 dBm 802.11g OFDM: +13.5 dBm
data rate	802.11 n: up to 300Mbps 802.11 b: 1, 2, 5.5, 11Mbps 802.11 g: 6, 9, 12, 18, 24, 36, 48, 54Mbps
receive sensitivity	-66dBm at 150Mbps -73dBm at 54Mbps -86dBm at 11Mbps
environment temperature and humidity	
environment humidity	5 ~ 95% (non-condensing)
Storage temperature	-40 ~ 85°C
working temperature	-20°C ~ +75°C
other	
LED light	SYS system running lights: a 1 second blink 1 time, indicating normal operation of the system Flash said it is upgrading the firmware, or press the reset key to reset the <hr/> NET outside the network connection indicator: 4G mode, fast flash indicates the 4G is dialing in the long light, indicating the WAN port Internet access successful long-off, the WAN side connection fails

	SIG 4G signal strength indicator: 4G at 90% signal strength of the above,3 LED light 4G at 45% - 90% signal strength,2 LED light 4G at 45% The signal strength of the following,1 LED light and <hr/> GPS signal indicator: connected to the GPS and when the light <hr/> of the SIM card to switch indicator: the current use of the SIM card number
of the physical characteristics of the	
shock	IEC60068-2-27
vibration	IEC60068-2-6
fall	IEC60068-2-32

2.3 ZX4528frequency comparison table

The network	router model	supports frequency band
UNICOM 3G (WCDMA)	ZX4528-W	WCDMA: B1/B8
Telecom 3G (EVDO)	ZX4528-E	CDMA&EVDO:BC0
4G 7-mode (FDD-LTE+TDD-LTE)	ZX4528-LTE (4G full netcom)	LTE-FDD: B1/B3/B5/B8/(B28) LTE-TDD: B38/B39/B40/B41 WCDMA: B1/B8 TD-SCDMA: B34/B39 CDMA&EVDO: BC0 GSM: 900/1800

(The specific frequency band is based on the module)

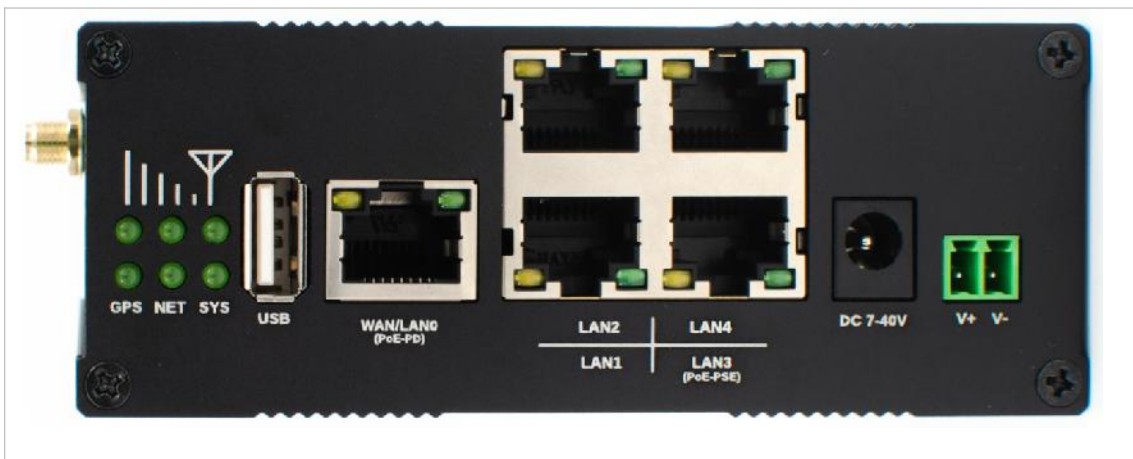
3. Interface description

WAN/LAN1-LAN4	standard RJ45 with illuminated interface; in non-standard router mode, the five RJ45 interfaces are all LAN port
DC power interfaces	using 2.1mm round head power interface, positive inside and negative outside, voltage input is 5-40V, the recommended input power is greater than 10W. 2PIN terminal power interface
RS232/RS485 serial	port 2.54mm 3PIN connector.

3G/WIFI antenna interface	SMA external rotation inner hole interface.
LED	SYS system operation indicator light:

	<p>Flashes once in 1 second, indicating that the system is running normally , flashing, indicating that the firmware is being upgraded, or the reset button is being pressed to reset</p> <hr/> <p>the NET external network connection indicator light: In 4G mode, flashing indicates that 4G is dialing and it is on for a long time, indicating that the WAN port is successfully connected to the Internet . Long off,The WAN terminal connection failed and flashed slowly. The SIM card could not be found. Please unplug the SIM card again (the SIM card contact is not good)</p> <hr/> <p>SIG 4G signal strength indicator: When 4G is above 90% signal strength,3 LEDs are on. When 4G is at 45%-90% signal strength,2 LEDs are on. 4G is on. When the signal strength is below 45%,1 LED lights</p> <hr/> <p>up the GPS signal indicator: When the GPS is connected</p> <hr/> <p>, the SIM card switching indicator lights up: The currently used SIM card number</p>
R (reset) button	is turned on, press this buttonfor 8seconds, and the system resets.
The SIM card slot	is a self-locking slot. If you press the yellow button on the right, the cato will pop up.

Customized built-in industrial-grade SMD cards can be provided, which can meet higher requirements in terms of operating temperature range, seismic resistance, moisture resistance, etc. The ICCID number will be written in the SMD, which can be activated when the user uses it.



2PIN terminal	V+, V-2PIN power supply terminal
DC power interface	adopts 2.1mm round head power interface, positive inside and negative outside, voltage input is 5-40V, the recommended input power is greater than 10W.
LAN0~LAN4	standard RJ45 with light interface; in standard router mode, LAN0 can be used as a WAN port.
USB	USB interface, you can connect an external USB Internet card and other
LED lights	<p>SYS system operation indicator light: Flashes once in 1 second, indicating that the system is running normally, flashing to indicate that the firmware is being</p>

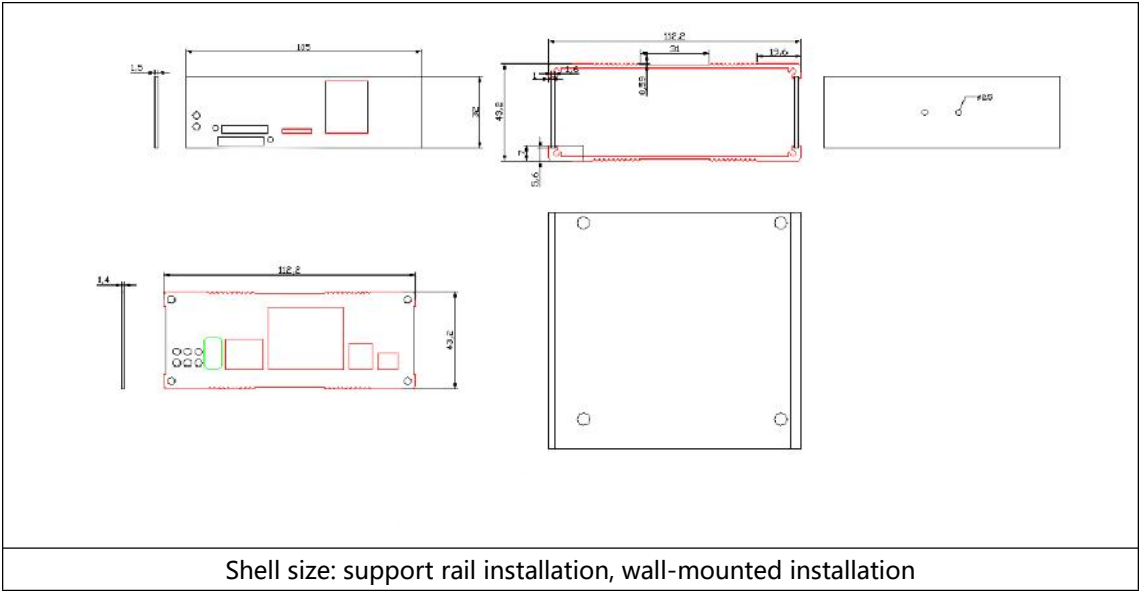
	upgraded, or the reset button is being pressed to reset
	<p>the SIG 4G signal strength indicator light: When 4G is above 90% signal strength, 3When the led light is long on 4G at 45%-90% signal strength, 2 led lights are long on 4G when the signal strength is below 45%, 1 led light is long on</p>
	<p>SIG 4G signal strength indicator: When the 4G is above 90% signal strength, 3 led lights are long on 4G when the signal strength is below 45%. At 45%-90% signal strength, 2 led lights are on for a long time. When 4G is below 45% signal strength, 1 led light is on for a long time. GPS signal indicator light: When the GPS is on during use</p>

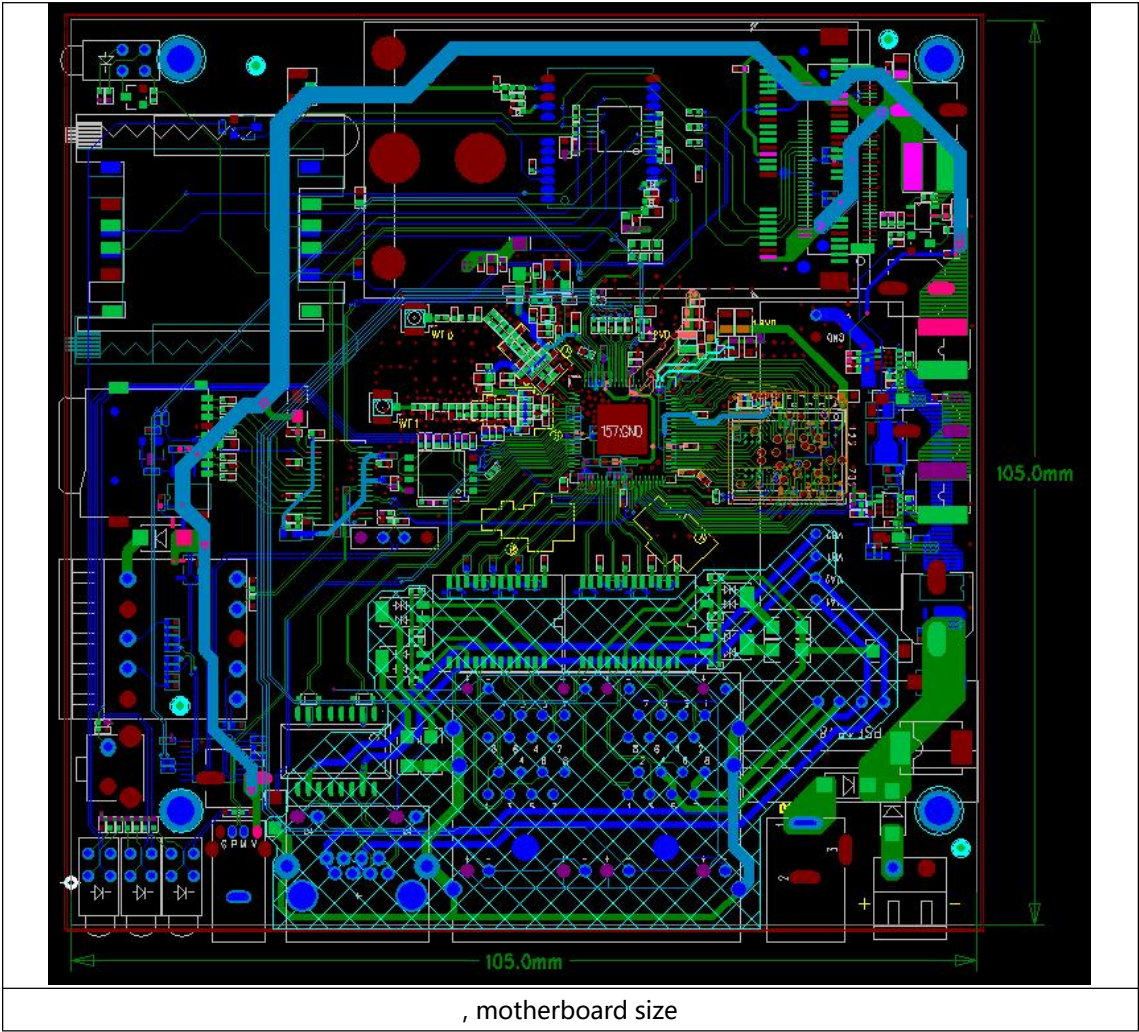


3G/WIFI antenna interface	SMA external rotation inner hole interface.	
SIM card indicator	When which SIM card is used, the corresponding SIM card indicator lights	
up. The SIM card slot	is a self-locking slot. Press the yellow button on the right and the card tray will pop up.	
TF card slot	TF card slot	
10PIN terminal	industrial serial interface	RS232/RS485 x 2 industrial terminal RS232 signal: TXD, RXD, GND RS485 signal: A, B, GND
	GPIO port	2 IO ports, can be configured as DI or DO

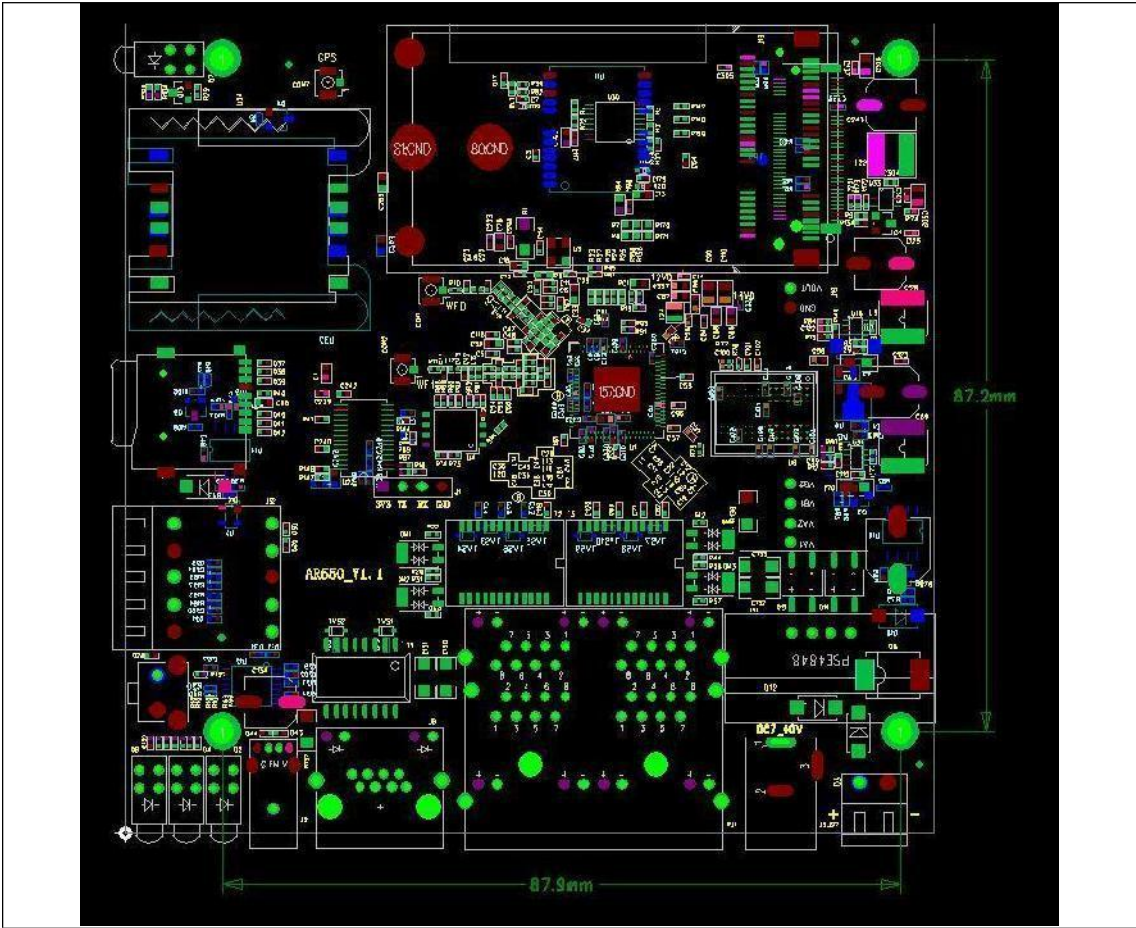
	5V power supply terminal	5V GND
R (reset) button	boot state Press this button for 8 seconds, and the system resets.	

4. Equipment block diagram (shell and motherboard)





Motherboard positioning column size



Shell size:

