

# ***JinCan*** **NETWORK**



4G Industrial Router ZX4224 Specification

Version: V1.2

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# Documentation

The Company reserves the right to make changes and improvements to the products described in this manual without prior notice; it also reserves the right to revise or withdraw this document at any time.

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

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## Preamble

### Summarize

This document mainly focuses on the hardware and software functions of the ZX4224 to give a brief introduction, so that readers can understand the basic information of this device.

### Readers

- Customers who need to know about the product

### Releases

The product and specification versions corresponding to the introduction of this document are as follows:

Diethylammonium chloride	Specification version
4G Industrial Router ZX4224 Specification	V1. 2

# 1. Product overview

## 1.1 Introduction

This router is an industrial iot communication device, fully compatible with 4G/3.5G/3G/2.5G networks, with industrial-grade protection, wide-temperature and wide-voltage design, it can easily set up high-speed and stable wireless transmission network. Utilizing public LTE network (or VPDN proprietary network) to provide users with wireless long-distance data transmission services.

This router adopts high-performance industrial-grade 32-bit communication processor and industrial-grade communication module, with embedded real-time operating system as the software support platform, and at the same time, it provides 1 RS232/485, 1 Ethernet LAN, 1 Ethernet WAN and WIFI interface, etc., which can connect to the serial devices, Ethernet devices and WIFI devices at the same time, and realize the functions of transparent data transmission and routing.

## 1.2 Areas of application

Industrial control, electric power, petroleum, coal mine, finance, communication, public security, heat, meteorology, water conservancy, transportation, municipal and other industries that require remote data transmission.

## 1.3 Product Illustrations



## 1.4 Characteristics

1. Adoption of high-performance industrial-grade communication modules
2. Support 3G(WCDMA/EVDO/TD-SCDMA), 4G(FDD-LTE/TD-LTE)
3. Metal housing with protection class IP30
4. Standard RJ45 (Ethernet) interface with built-in lightning protection (6000V electromagnetic isolation included)
5. Wide voltage and current input: DC5-40V/1A; automatic power-off protection for ultra-high voltage
6. Anti-reverse power supply protection, anti-surge protection; ESD anti-static protection
7. Hardware and software watchdog anti-deadline design, after the router is disconnected from the network, it will automatically power off and restart, to ensure stable and reliable operation of the equipment
8. Network disconnection automatic detection, dialing failure automatic restart, timed restart and other features
9. Serial port pass-through function, through the serial port can enter the command and control mode, control the router and ancillary equipment
10. Supports multiple DDNS dynamic domain name services
11. Port mapping, DMZ hosting, and other features
12. Support VPN Server PPTP Server,L2TP Server,openvpn Server
13. Support VPN Client PPTP Client, L2TP Client, openvpn Client
14. Supports socket server and client modes
15. Supports cloud intranet penetration
16. Base station location function, etc.

## 2. Functional overview

### 2.1 Software functions

Network interconnection	
Network access	3G/4g dial-up Internet access, support APN, VPDN, built-in information of hundreds of apns around the world, the router can automatically match the Internet access after inserting the SIM card.
Access Authentication	Support CHAP/PAP/MS-CHAP/MS-CHAPV2/none
Network standard	Support LTE/WCDMA(HSPA+)/TD-SCDMA/EVDO/EDGE/GPRS
LAN protocol	Supports ARP, Ethernet, STP
WAN protocol	Supports static IP, DHCP, pppoe, PPTP,L2TP
Number of Supported Users	Wired: 253, Wireless: 32
Network protocol	
IP application	Support Ping, Traceroute, DHCP server/wireless relay/client, DNS relay, dynamic domain name DDNS, Telnet, SSH, HTTP, HTTPS, TFTP, FTP, SFTP, ipv6
IP routing	Supports static routing, IGMP Proxy
TTL	Customizing client host TTL values
Network security	
Firewalls	Supports Stateful Packet Inspection (SPI) to protect against Denial of Service (ddos) attacks
	Supports filtering of multicast/ping packets, Access Control Lists (acls)
	DMZ, MAC filtering, whitelist/blacklist access control
	Support NAT, PAT, DMZ, Port Mapping, Virtual Server
AAA	Supports local authentication, Radius
Data security	Supports L2TP, PPTP, openvpn, CA

Dependability	
Backup function	Interface backup, 4G, wired or relay disconnection backup each other
Link in-line inspection	4G status detection, auto redial when disconnected or bad signal
	VPN disconnect redial interval definition, with dialing count control
	WAN side sends heartbeat detection packet detection, disconnection automatic connection
	Reset
Bridge Multi-Gateway	Supports multi-LAN setup, router has two gateways (two intranets)
WLAN	
Wireless 2.4ghz	Support IEEE 802.11b/g/n
	Supports wireless area code (country/region channel) selection
	Wifi on time slot control
	SSID broadcast time slot control
	Supports transmit power adjustment
	Single and dual antenna (150Mbps,300Mbps rate) control
	Supports Radius authentication
	Guest network: can set up guest WIFI, manage guest Internet behavior
	Wireless bridging: can bridge to other WIFI (WDS bridging, etc.)
	Wireless access control: Internet access control for MAC (black and white list)
Internet of Things (iot)	
DTU	Supports TCP, UDP transparent transmission mode, TCP Server mode, and command mode.
Secondary development (edge computing) *Extended version	
Python development	Can develop your own Python program to achieve the project's special functional requirements for the router and greatly reduce the time from customization to deployment.
Shell script	Customized script function for customized management of the

	router and related functions
System interface	Router provides secondary development parameter interface (http), such as obtaining the router status, set the router-related functions. Convenient for mobile APP, small program, cloud server development.
Network management	
Configuration	Supports local or remote HTTP, HTTPS, Telnet, SSH, and intranet penetration.
Upgrade Method	Support local or remote WEB, TFTP, FTP, SFTP server, intranet penetration remote
Logging function	Support local system log, remote log. Important logs are saved by power down
	Supports log power-down saving

## 2.2 Hardware parameters

Connector	
Ethernet interface	2* 10/100Mbps Fast Ethernet interfaces, WAN/LAN adaptive (2 LAN in 4G mode)
Wi-Fi interface	Optional, IEEE802.11b/g/n
Industrial Serial Interface	RS232/RS485 x 1 Industrial Terminal RS232 signal: TXD, RXD, GND RS485 Signal: A, B, GND
SIM card holder	Drawer Mount
TF card	Insert TF memory card
Antenna connectors	SMA externally rotated bore: 3G/4G network: SMA x 2 WLAN: SMA x 2
Reset button	1
Mechanical property	
Installation	Guide rail, wall mounted
Overall dimensions	Length, width and height: 70*80*26mm (without antenna

	interface)
Housings	Aluminum
Protection class	IP30
Cooling method	Thermally Conductive Wool Shell Heat Dissipation
Weight (g)	145g
<b>Power supply</b>	
Power connector	DC2.1 header
Power Input	DC 5-40V, anti-reverse connection protection
Standby power consumption	100ma@24V (HSPA+ network)
Operating power consumption	150ma@24V (HSPA+ network)
Peak power consumption	180ma@24V (HSPA+ network)
Reverse polarity protection	Be in favor of
<b>Wi-Fi transmission power</b>	
Firing power	802.11n HT20 MCS7 : +13.5dbm 802.11n HT40 MCS7 : +13.5 dbm 802.11b CCK: +18 dbm 802.11g OFDM: +13.5dbm
Data rate	802.11n: up to 300Mbps 802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps
Receiver sensitivity	-66dbm at 150Mbps -73dbm at 54Mbps -86dbm at 11Mbps
<b>Ambient temperature and humidity</b>	
Environmental humidity	5 ~ 95% (no frosting)
Storage temperature	-40 ~ 85°C



Operating temperature	-20°C ~ +75°C
<b>(sth. Or sb) else</b>	
LED light	<p>SYS system operation indicator:          Blinks 1 time per second to indicate normal system operation          A fast flash indicates that the firmware is being upgraded, or the reset button is being pressed to reset the</p> <hr/> <p>NET extranet connection indicator:          When in 4G mode, a fast flash indicates that 4G is being dialed          Long light, indicates successful WAN port internet access          Long out. Connection failure on the WAN side.</p> <hr/> <p>SIG 4G signal strength indicator:          SIG lamp is on long when 4G is above 90% signal strength          4G at 45% - 90% signal strength, SIG light blinks once a second          SIG light blinks fast when 4G is below 45% signal strength</p> <hr/> <p>VPN signaling indicator:          Lights up when the VPN connection is successful          When the VPN connection process is fast-flashing          Long extinction when VPN connection is disconnected</p>
<b>Physical property</b>	
Shockproof	IEC 60068-2-27
Vibratory	IEC 60068-2-6
Fall	IEC 60068-2-32

## 2.3 ZX4224 Frequency Comparison Table

Reticulation	Router Model	Supported Frequency Bands
Unicom 3G (WCDMA)	ZX4224-W	WCDMA: B1/B8
Telecom 3G (EVDO)	ZX4224-E	CDMA&EVDO: BC0
4G 7-mode (FDD-LTE+TDD-LTE)	ZX4224-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

(Specific frequency bands are module-based)

### 3. Interface description



LAN1/LAN2	Standard RJ45 connector with light; LAN2 can be used as a WAN port in standard router mode.
DC Power Interface	Adopting 2.1mm round head power connector, internal positive and external negative, the voltage input is 5-40V, and the recommended input power is more than 10W.
RS232/RS485 serial port	2.54mm 3PIN connector.



3G/WIFI antenna interface	SMA male swivel female connector.
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Indicator light	<p>SYS system operation indicator:                  Blinks 1 time per second to indicate normal system operation                  A fast flash indicates that the firmware is being upgraded, or that the reset button is being pressed to reset the</p> <hr/> <p>NET extranet connection indicator:                  When in 4G mode, a fast flash indicates that 4G is being dialed                  Long light, indicates successful WAN port internet access                  Long out. Connection failure on the WAN side.</p> <hr/> <p>SIG 4G signal strength indicator:                  SIG lamp on long when 4G is above 90% signal strength                  4G at 45% - 90% signal strength, SIG light blinks once a second                  SIG light blinks fast when 4G is below 45% signal strength</p> <hr/> <p>VPN signaling indicator:                  Lights up when the VPN connection is successful                  When the VPN connection process is fast-flashing                  Long extinction when VPN connection is disconnected</p>
R (Reset) key	Press this button for 8 seconds to reset the system.
SIM card slot	Self-locking slots, stab the yellow button on the right hard enough and the cartridge will pop out.

Customized built-in industrial grade SMD cards are available to meet higher requirements in terms of operating temperature range, vibration and humidity resistance. The ICCID number will be written in the SMD and activated by the user when using.