YZWK001

COMPACT INDUSTRIAL 4G ROUTER



Industrial & automation

Energy & metering

Smart city

Building automation

Retail & vending

Ultra-compact 60 g

4G LTE + Wi-Fi

RS232 or RS485

m2mCloud remote

DATASHEET

Features

Modem

Modem module	4G (LTE) Cat-1: LTE-FDD up to 10 Mbps ↓ / 5 Mbps ↑; LTE-TDD up to 9.01 Mbps ↓ / 3.096 Mbps ↑
Status	Signal strength (RSSI), SINR, RSRP, RSRQ, BAND, IMSI, ICCID
APN	APN and account authentication settings, including NONE, PAP, CHAP and PAP+CHAP.
PDP	PDP profile settings with IPv4, IPv6 or IPv4v6 selection.

Wireless

Wireless mode	2.4 GHz, IEEE 802.11 b/g/n; Access Point (AP), Station (STA)
WiFi security	WPA2-PSK, WPA-PSK; AES
SSID	SSID stealth mode
WiFi clients	Multiple wireless clients in AP mode.

Ethernet

LAN	1 x LAN port, 10/100 Mbps, compliance with IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX

Network

Routing	Static routes with destination network, gateway, outgoing interface and metric settings.
Network protocols	TCP, UDP, IPv4/IPv6, ICMP, ARP, DHCP, DNS, NTP, HTTP/HTTPS, SSH2 and MQTT; FTP and Telnet clients.
Connection monitoring	ICMP reachability checks with configurable primary/backup targets, source interface, interval, retry count and recovery action.
DHCP	IPv4 DHCP server with address pool, lease time, gateway/DNS settings and static IP-to-MAC assignments; configurable stateful/stateless IPv6 address allocation.
Link supervision	Cellular-link keepalive with configurable IPv4/IPv6 probe targets and connection status monitoring.
NAT	IPv4 DNAT, SNAT, MASQ and DMZ rules for port forwarding and address translation.
QoS	Upload/download traffic rules by interface, network and optional port, with rate, ceiling rate and priority settings.

DDNS	Configurable DDNS provider, account/token, domain and update interval, with an IPv6 update option.

Security

Firewall	Stateful packet filtering and management-service access permissions for available access zones such as LAN and VPN.
Attack prevention	Configurable DDoS limiting, IP-spoofing, port-scan and SYN-flood rules, plus multicast and IDENT access restrictions.
Address Filter	LAN Internet restriction switch with VPN/m2mCloud-only access; disable, blacklist and whitelist modes; IP-only, MAC-only and combined IP+MAC matching. Rules support input/forward direction, TCP/UDP/ICMP, source/destination IP or CIDR, ports and destination interface.
Domain Filtering	Configurable disabled, blacklist or whitelist domain-filtering modes.

VPN

OpenVPN	Supports dual client instances and a server instance operating independently.
WireGuard	IPv4-only tunnels with public/private-key authentication and optional pre-shared keys; up to 4 peer configurations, remote-subnet routes, keepalive, full-tunnel routing and masquerading.
ZeroTier	Joins multiple virtual networks by network ID, with independent controls for managed IP/routes and global routes; provides node and virtual-network connection status monitoring.
IPsec	IKEv1/IKEv2 and PSK authentication; tunnel and transport modes; configurable local/remote subnets, encryption/authentication parameters and PFS for site-to-site connectivity.
L2TP	Client and server operation with account authentication, client address pools, remote-subnet routes, LCP keepalive and MTU/MRU settings for remote access and site interconnection.
m2mCloud	m2mCloud remote networking and access to on-site devices; supports PLC program upload/download with the corresponding programming software, without a fixed public IP or inbound port forwarding at the site.
GRE	GRE tunnels with local/peer endpoints, virtual addresses and tunnel-key identifiers; GRE itself does not provide encryption.
PPTP	PPTP client and server configuration with account authentication and PPP parameters for legacy-network compatibility.

Modbus Acquisition & Reporting

Acquisition mode	Modbus TCP/RTU master acquisition with device and command configuration; RTU acquisition uses the fitted RS232 or RS485 serial port.
Read function codes	01 Read Coils; 02 Read Discrete Inputs; 03 Read Holding Registers; 04 Read Input Registers.
Data formats	16-bit signed/unsigned integers; 32-bit signed/unsigned integers (ABCD); 32-bit floating point (ABCD/CDAB).

Device and command management	Up to 16 devices, with up to 32 acquisition commands per device; supports RTU serial or TCP connections.
Command configuration	Configurable command name, slave address, register start/count, mapping address, writable attribute and independent acquisition period.
Acquisition and reporting timing	Per-command acquisition period: 1-86400 s; response timeout: 30-120000 ms; MQTT/TCP/UDP support optional periodic reporting at intervals of 1-86400 s.
Data reporting	MQTT, TCP and UDP data reporting; IEC 60870-5-104 protocol integration.
MQTT settings	Server address/port, account authentication and CA certificates; per-device publish/subscribe topics; writable commands accept downlink control through subscribed messages.
IEC 60870-5-104 settings	Configurable communication port, common address and acquisition-command mapping addresses.
Serial-port sharing	RTU acquisition and DTU services cannot own the same serial port simultaneously; Modbus TCP acquisition does not occupy the serial port.

Application Services

DTU transparent transmission	Serial-to-TCP/UDP client or server operation, with primary/backup servers, login data, heartbeat and timeout settings.
DTU MQTT	MQTT serial-data access with account authentication, client ID, publish/subscribe topics, QoS 0/1/2 and keepalive settings.
Serial protocol gateway	Modbus RTU/ASCII master or slave modes and DNP3 master/outstation modes, using the device serial interface.
MQTT Broker	Local MQTT broker with plain/TLS transport, listen address/port, anonymous or username/password authentication and server certificate/key settings.
SNMP	SNMPv2c/SNMPv3 management and SNMPv2c Trap reporting; configurable community, Trap destination and SNMPv3 authentication/privacy parameters.
Scheduled tasks	Scheduled device or cellular-modem restart by day of week and time.
SMS	SMS sending with character-set selection and a trusted-number list.
SMTP and event alarms	SMTP email with optional STARTTLS/TLS; email/SMS notifications for configured events such as weak signal, modem-status changes, failed logins and firewall attacks.
Network diagnostics	Ping and traceroute diagnostics with configurable target and source IP.

Management & Maintenance

WEB UI	HTTP/HTTPS management for status, configuration and maintenance; HTTPS is enabled through the management-access settings.
CLI	SSH2/Telnet command-line access with configurable management-service permissions.
Accounts and permissions	User-account and configuration-permission management.
Configuration management	Configuration export/import and factory reset.
Logs	Event/system logs, service runtime status and remote-log server/port settings.

Time synchronization	NTP server and backup server, synchronization interval and time-zone settings, plus manual time entry.

m2mCloud Remote Access

Cloud remote access	Remote access from an authorized m2mCloud client to the router and LAN-connected PLCs, HMIs and other devices for configuration, diagnostics and maintenance.
PLC program upload/download	PLC program upload (PLC to engineering PC), download (engineering PC to PLC) and remote commissioning through m2mCloud using the corresponding programming software, reducing on-site service visits and travel costs.
Remote networking	Cloud-controlled L3 routing or L2 bridging for remote-subnet or same-subnet access; L3 mode supports up to 10 remote IPv4 subnet routes.
NAT traversal and relay	L3 mode supports P2P direct communication or server relay; L2 bridging uses relay. No fixed public IP or inbound port forwarding is required at the site, simplifying cellular and NAT network access.
Remote serial access	Authorized remote access to the fitted RS232 or RS485 port through the platform serial-proxy client; the same port cannot be used concurrently by DTU or Modbus RTU acquisition.
Cloud monitoring and maintenance	Reports device model, firmware version, uptime, cellular signal, dial-up state and tunnel status; supports cloud-issued device reboot commands for centralized monitoring and troubleshooting.
Connection recovery	Automatically reconnects the cloud management session and restores the tunnel after a recoverable interruption, reducing the need for on-site manual reconnection.
Communication security	TLS protects the cloud management connection; tunnel traffic is encrypted with a group key distributed by the platform.
Requirements	Requires the corresponding m2mCloud platform, authorization, client and reachable IPv4/UDP service. PLC operations require compatible programming software, device permissions and correct site network settings.

Hardware Features

CPU	MT7628AN / NN
RAM	128 MB, DDR2
FLASH storage	16 MB, SPI NOR Flash

Firmware

Update	Web firmware upload with a choice to retain the configuration or restore factory settings after upgrade.

Firmware Customization

Operating system	OpenWrt based Linux OS
Kernel Version	Linux Router 4.9.87
Script runtime	Shell, Python 3.9.17

Power

Connector	1 x 4-pin 3.5 mm spacing power socket
Input voltage range	9 – 35 V DC, reverse polarity protection

Power consumption	< 3 W

Physical Interfaces (Ports, LEDs, Antennas, Buttons, SIM)

Ethernet	1 x RJ45 port, 10/100 Mbps, compliance with IEEE 802.3, IEEE 802.3u standards, supports auto MDI/MDIX
Serial	1 x serial port, factory-configured as RS232 or RS485 (specify when ordering); combined 4-pin power / serial terminal.
Status LEDs	1 x Power LED, 1 x Modem network indicator light, 1 x Modem signal indicator light, 1 x LAN indicator light
SIM	1 × push-push Nano SIM slot, 1.8 V / 3 V
Power	4-pin 3.5 mm pitch power terminal, input voltage 9-35 V DC
Antennas	1 × SMA female connector (4G), built-in WiFi antenna (FPC)
Reset	Short press to reboot; press and hold for 15 s to restore factory settings.

Physical Specification

Casing material	ABS Plastic
Dimensions (W x H x D)	86.68 x 65.82 x 28.00 mm
Weight	60 g
Mounting options	Integrated DIN-rail mounting

Operating Environment

Operating temperature	-30 °C ~ 75 °C
Operating humidity	< 95 % non-frosting

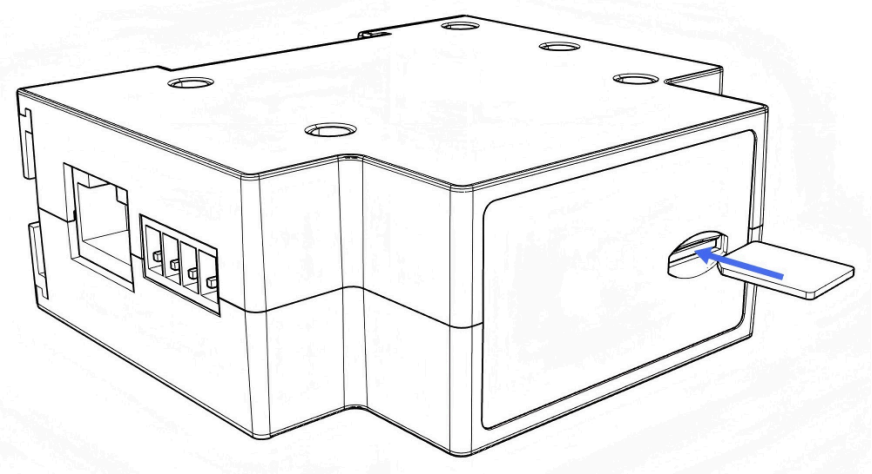
EMI Immunity

Standards	Draft EN 301 489-1 V2.2.0, Draft EN 301 489-17 V3.2.0, Draft EN 301 489-52 V1.1.0 FCC 47 CFR Part 15B (2017), ANSI C63.4 (2014)
ESD	EN 61000-4-2: 2009
RS	EN 61000-4-3: 2006 + A1: 2008 + A2: 2010
EFT	EN 61000-4-4: 2012
Surge immunity (AC Power Line)	EN 61000-4-5: 2006
Surge immunity (Ethernet ports)	EN 61000-4-5: 2014, clause 7.1 of ITU-T K21
CS	EN 61000-4-6: 2009
DIP	EN 61000-4-11: 2004

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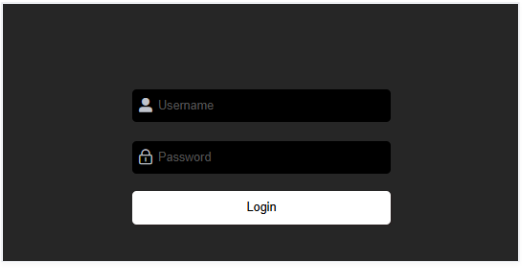
Hardware Installation

1. Press the Nano SIM card into the push-push slot until it locks. To remove the card, press it again to release and eject it.
2. Connect the 4G antenna to the SMA connector (Wi-Fi uses the internal FPC antenna).
3. Wire the DC supply (9 – 35 V DC) to the `V+` / `V–` pins of the 4-pin terminal, then plug the terminal into the device.
4. Connect wirelessly to the device using the SSID and password provided on the device information tag, or use an Ethernet cable connected to the LAN port.

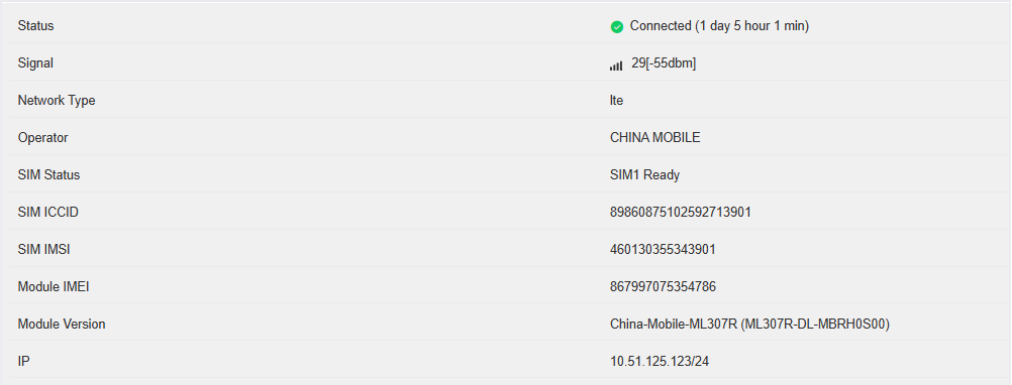


Login to Device

1. To enter the router's Web interface (WebUI), type http://192.168.8.1 into the URL field of your Internet browser.
2. Use login information shown in image A when prompted for authentication.
3. Go to the Overview page and pay attention to the Signal Strength indication (image B) after login. To maximize the cellular performance try adjusting the antenna or changing the location of your device to achieve the best signal conditions.



A. Router Web interface (login)



Status	Connected (1 day 5 hour 1 min)
Signal	29[-55dbm]
Network Type	lte
Operator	CHINA MOBILE
SIM Status	SIM1 Ready
SIM ICCID	89860875102592713901
SIM IMSI	460130355343901
Module IMEI	867997075354786
Module Version	China-Mobile-ML307R (ML307R-DL-MBRH0S00)
IP	10.51.125.123/24

B. Overview — note the signal strength indication

Technical Information

Radio Specifications

RF technologies	4G, WiFi
Max RF power	25 dBm@LTE

Bundled Accessories Specifications*

4G antenna	698~960 / 1710~2690 MHz, 50 Ω, gain** 5 dBi, SMA male connector

*Order code dependent. **Higher gain antenna can be connected to compensate for cable attenuation when a cable is used. The user is responsible for the compliance with the legal regulations.*

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What's in the Box

Package contents • YZWK001

- 1 × YZWK001 device (Standard)
- 1 × Packaging box (Standard)
- 1 × 4G magnetic-mount antenna (Standard)
- 1 × Ethernet cable, 1 m (Standard)
- 1 × 4-pin power / serial terminal, 3.5 mm (Standard)
- 1 × DC power adapter and matching lead (Optional)





YZWK001
Standard • 1



4G magnetic-mount antenna
Standard • 1



Ethernet cable, 1 m
Standard • 1



4-pin power / serial terminal, 3.5 mm
Standard • 1

Standard accessories are supplied with the base configuration; optional accessories are selected separately.

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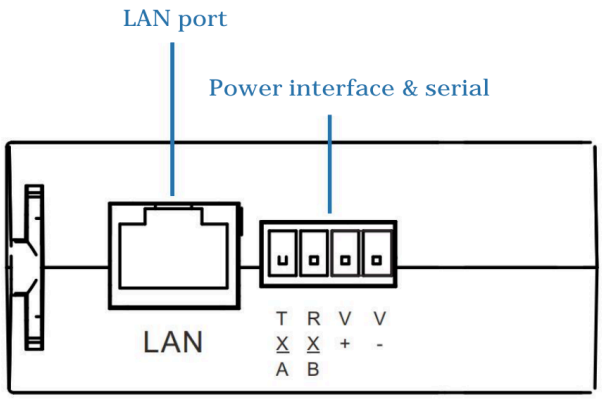
Available Versions

Product	Region (Operator)	Frequency
YZWK001 (CN)	China • Southeast Asia	4G (LTE-FDD): B1, B3, B5, B8 4G (LTE-TDD): B34, B38, B39, B40, B41

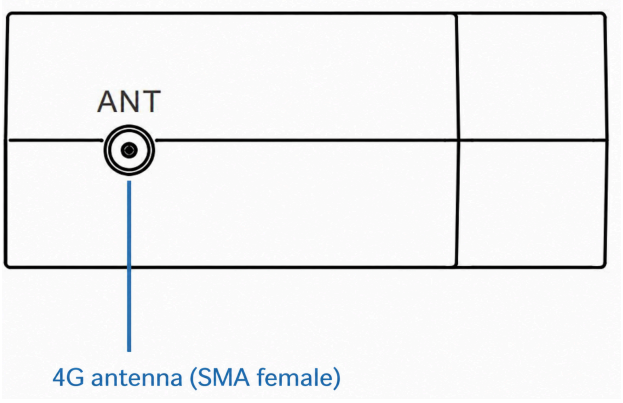
Product	Region (Operator)	Frequency
YZWK001 (EU)	Europe / New Zealand / Australia	4G (LTE-FDD): B1, B3, B5, B7, B8, B20, B28
YZWK001 (LA)	Latin America	4G (LTE-FDD): B2, B3, B4, B5, B7, B8, B28, B66

The price and lead-times for region (operator) specific versions may vary. For more information please contact us.

Hardware



Bottom View — LAN port, power & serial terminal (serial type as specified when ordering)



Top View — 4G antenna connector (SMA female)

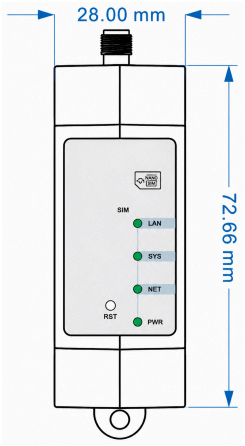
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YZWK001 Spatial Measurements & Weight

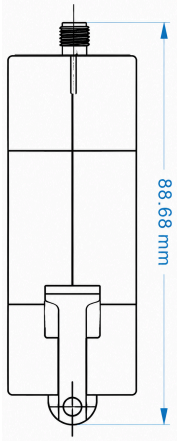
Main Measurements

W x H x D dimensions for YZWK001 — Device housing*	86.68 x 65.82 x 28.00 mm
Box	170.00 x 125.00 x 36.00 mm
Weight	60 g

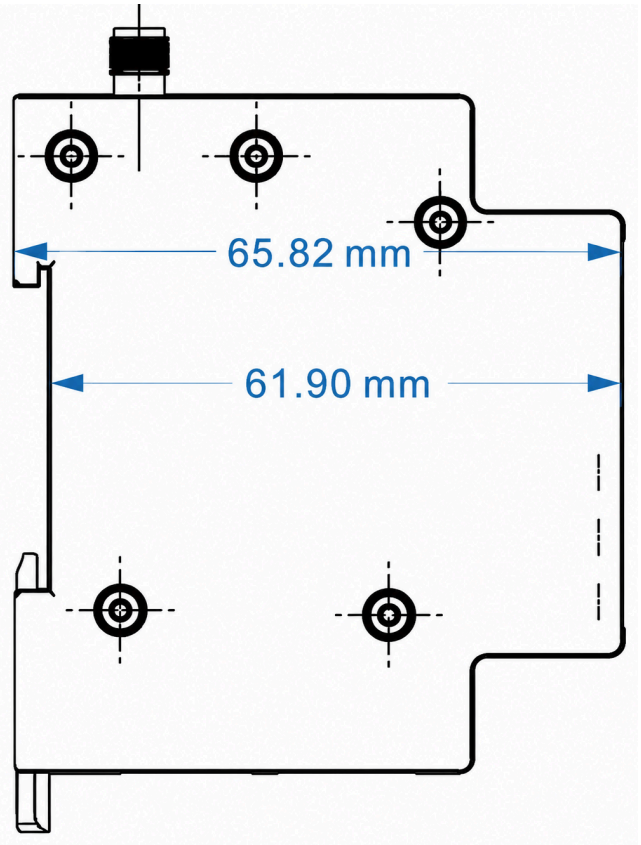
**Housing measurements are presented without antenna connectors and screws; for measurements of other device elements look to the sections below.*



Front View



Rear View



Left View

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Mounting Space Requirements

The figure below depicts an approximation of the device's dimensions when cables and antenna are attached:

