InHand Networks

Compact Industrial Router

4G LTE, Dual SIM, Cloud management and Five Ethernet Ports

InRouter305

Industrial LTE Router

Facing the ever-increasing digitalization of the Internet of Things, both the application scenarios of the Internet of Things and the terminal equipment of the Internet of Things, there is an urgent need to realize the Internet to promote the digital transformation of enterprise business, and more economical and more efficient Internet solutions are needed. InHand launches IR305 series products combined with DeviceManager cloud management service. It is suitable for various industries of the IoT, making your digital IoT more convenient, more economical and more efficient!
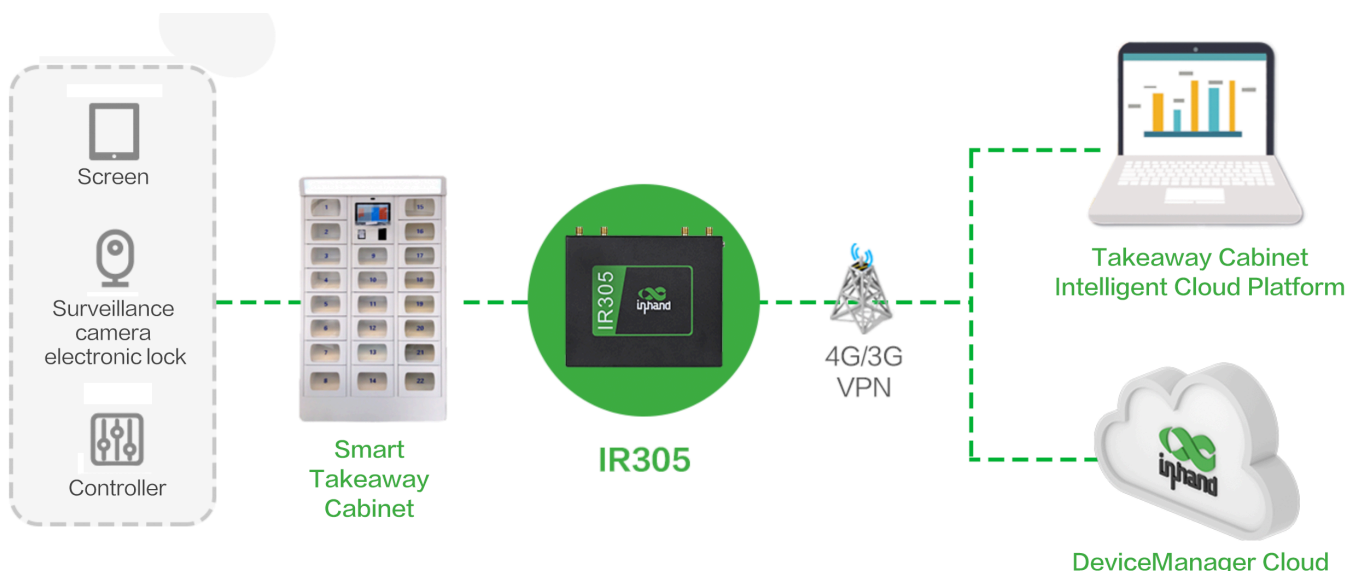
The InRouter305 (IR305) is an IoT cellular router that integrates 4G LTE, Wi-Fi, and VPN technologies to provide an easy, reliable, and secure Internet connectivity. With technologies such as 4G wireless wide area network and Wi-Fi wireless local area network, it provides uninterrupted multiple network access capabilities, and with its comprehensive security and intelligent software services, efficient and secure network can be realized and it can also provide safe and reliable data links for enterprises to realize digital networking.

This product is suitable for the networking of unattended devices and sites. It is embedded with watchdog and multi-layer link detection mechanisms to ensure reliable and stable communications. Meanwhile, combined with the InHand Device Manager cloud platform, it is easy for enterprise users to conduct unified cloud management centrally, grasp status of devices effortlessly, save deployment costs and improve management efficiency, providing one-stop solutions for your large-scale IoT deployment.

Key industries:

- Smart Commerce
  - ATM, POS
  - Unattended kiosk
  - Digital signage
  - Retail stand
- Smart Energy
  - EV charging
  - Power distribution, Meter reading
- Smart City
  - Heat, Water & air supply
  - Gas supply security, Traffic management, E-police
  - Smart parking
- Smart Manufacturing
  - Networking machines from OEM discrete manufacturing
  - Networking industrial robots
  - Industrial automatic factories & production lines
- Smart medical care
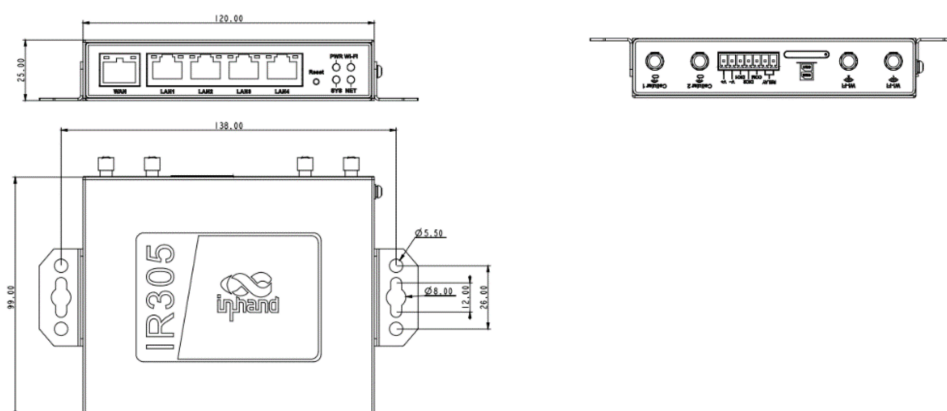 - Medical device networking and other applications

Application Case

Screen

Surveillance camera electronic lock

Controller

Smart Takeaway Cabinet

IR305

4G/3G VPN

Takeaway Cabinet Intelligent Cloud Platform

DeviceManager Cloud

Features and Advantages

+ Supports 5G- the new network experience

+ Multi-level link backups mechanism to ensure uninterrupted networks

+ Comprehensive firewall secure strategies, protecting networks

+ Multiple VPN protocols, rapid networking with multiple dynamic routes

+ Remote connection built by InConnect, realizing efficient maintenance management

+ Supports InHand Device Manager cloud platform for efficient central network management

+ Abundant industrial ports, covering IoT scenarios

+ Industrial-grade design

● Supporting 5G- the new network experience

The IR305 is equipped with 5G cellular high-speed network access capability, providing new capabilities and experiences brought by 5G networks. High bandwidth and low latency enable data service without limits. 5G high-speed network, downlink 2Gbps, low latency network, data agile and accessible, supports SA (independent network) and NSA (independent network).

● Uninterrupted network access

IR305 has a variety of network access capabilities (cellular, Wi-Fi and wired), serving for different network environments. It provides network access at different rates for different business demands. Even for on-site IoT devices, convenient and efficient network access services are provided.
- Supports 4G/5G networks. Several network types can be selected: 5G (2Gbps DL, theoretically), LTE CAT6/CAT4/CAT1
- Supports Wi-Fi, both AP & STA modes, for users to easily set up secure wireless networks. Supports 802.11b/g/n, transmission rate up to 300Mbps, - WEP/WPA/WPA2 encryption. Failover between 4G and Wi-Fi, effectively ensuring uninterrupted data transmission.

● "Always online", ensuring uninterrupted network

Provides high quality network services that are always online, ensuring the stability of business network, reducing the risk of network malfunction, saving network investment cost.
- Link-backups: enabling wired, cellular and Wi-Fi to make backups mutually.
- Dual SIM failover, automatically switches to the more stable carrier networks.
- VRRP hot backup mechanism: redundant backups.
- Multi-layer link detection mechanism: detects link status, realizing automatic re-pull and fault self-recovery.

● Strong security protection

Security protection is critical in a complex network environment. Multi-level security policies protect sensitive data and key service networks from attacks and threats, providing a secure network to protect digital assets while business advances rapidly.
- Data transmission: IPsec VPN (IKEv1, IKEv2), L2TP, PPTP, OPEN VPN, DMVPN, GRE and CA certificate.
- Network protection: supports SPI (Stateful Packet Inspection), SSH (Secure Shell), intrusion protection (forbidden ping), DDoS defense, attack defense, IP-MAC binding, etc., protecting the network against external attacks.
- Device access: supports user hierarchical authorization (CLI only), implementing secure access management by providing different roles and different permissions.

● Concise and convenient cloud management

IR305 connects to the InHand DeviceManager remote device management cloud platform to manage tens of thousands of distributed site devices in real time and grasp device status anytime and anywhere, making management more economical and more efficient!

● Abundant industrial ports, covering IoT scenarios

With rich industrial interfaces, the IR305 can be widely used in highly integrated and diversified IoT scenarios to provide cost-effective networking deployment solutions.
- 5* 100Mbit/s network port: WAN/LAN/VLAN
- Wireless Wi-FI: supports AP and STA modes with a maximum bandwidth of 300Mbps
- Industrial serial ports: RS232 & RS485
- Industrial IO: 4-channel digital IO (DI and DO can be configured).

● Industrial-grade design

Metal shell, IP30 protection. EMC level 3. Wide operating temperature: -20°C~70°C. IR305 is compact, which effectively reduces the space of installation and deployment. It supports DIN rail mounting, lug mounting and wall mounting, which is suitable for a variety of IoT deployment sites.

Dimensions (mm)

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Product Specifications

InRouter305 Hardware Specifications			
Hardware Platform			
CPU Platform	580MHz	RAM	128MB DDR2
Flash	64MB SPI		
Interface			
Ethernet Port	5*10/100Mbps fast Ethernet port, LAN/WAN/VLAN port 1.5KV network isolation transformer protection		
Power Supply	DC9-36V, over-current protection, anti-reverse connection, 2 PIN industrial terminal block		
Reset Button	Pinhole reset button		
I/O (*Optional)	Support 4*IO (DO or DI can be configured)		
Serial port (*Optional)	1*RS232+1*RS485		
* Alternatives for I/O or Serial port			
SIM Card	Drawer-type slot*1, support dual-NANO SIM		
Wi-Fi (Optional)	IEEE 802.11b/g/n, 300Mbps		
Antenna Connector	4G: SMA x 1; Wi-Fi: RP-SMA x 1 Note: North America models: 2 x SMA 4G antenna connectors.		
Ground Terminal	Supports		
Mechanical Specs			
Dimensions	120 x 99 x 25mm	Weight	354g
Installation Method	Panel mounting, rail mounting	Protection Rating	IP30
Housing	Metal	Cooling	Fanless
Power Rate			
Working Power	150-320mA@12V	Standby Power	120-200mA@12V
Peak Power	320mA@12.0V		
Wi-Fi Transmit Power			
Transmit Power	802.11b:16dBm +/-2dBm(11Mbps) 802.11g:16dBm +/-2dBm(54Mbps) 802.11n@2.4GHz:16dBm +/-2dBm(HT20 MCS7) 802.11n@2.4GHz:16dBm +/-2dBm(HT40 MCS7)		
Ambient Environment			
Storage Temperature	-40 ~ 85°C	Operating Temperature	-20 ~ 70°C
Ambient Humidity	5 ~ 95% (non-condensing)		
Indicator			
LED	Power, Status, Cellular, Wi-Fi		
EMC			
Static	EN61000-4-2, level 3	Radiation Electric Field	EN61000-4-3, level 3
Pulsed Electric Field	EN61000-4-4, level 3	Surge	EN61000-4-5, level 3
Conducted Disturbance Immunity	EN61000-4-6, level 3	Shock Wave Resistance	EN61000-4-12, level 3
Power Frequency Magnetic Field Resistance	EN61000-4-8, horizontal / vertical 400A/m (>level 2)		
Physical Specs			
Shockproof	IEC60068-2-27	Vibration Resistance	IEC60068-2-6
Free Fall	IEC60068-2-32		
Certificate			
CE, FCC, CB, E-MARK, PTCRB, IC, VZW, RCM, AT&T			

InRouter305 Software Specifications			
Network Connection			
Network Access	APN, VPDN	Access Authentication	CHAP/PAP
LAN Protocol	ARP	WAN Protocol	PPP, PPPoE, DHCP
Network Type	GSM/GPRS/EDGE, UMTS/HSPA+/EVDO/TD-SCDMA, TDD LTE/FDD LTE (Please refer to the Ordering Guide for frequencies.)		
Network Protocol			
IP Application	Ping, RouteTrace, DHCP Server, DHCP Relay, DHCP Client, DNS relay, DDNS, Telnet		
IP Routing	Static routing, OSPF dynamic routing		
NAT	Supports network address translation		
Security			
Network Security	Stateful Packet Inspection (SPI), DoS attack defense; Multicast filter/Ping probe packet, Access Control List (ACL); Content URL filter, port mapping, virtual IP mapping, IP-MAC binding		
Data Security	Supports PPTP, L2TP, GRE, IPSEC VPN (IKEv1, IKEv2), OPENVPN, DMVPN Supports CA digital certificate		
Reliability			
Hot Backup	VRRP hot backup		
Link Detection	Sends heartbeat packets to detect, auto redials when disconnected		
Dual SIM Failover	Supports dual SIM failover		
Embedded Watchdog	Device runs self-detection, auto recovers from malfunctions		
WLAN (Optional)			
Protocol	IEEE 802.11b/g/n	Rate	Up to 300Mbps
Mode	AP, Client and WDS modes		
Security	Open system, shared key, WPA/WPA2 certification WEP/TKIP/AES encryption		
Transmission Distance	80 meters by line of sight (Actual transmission distance depends on environment of the site.)		
Network Management			
QoS Management	Bandwidth limit, IP speed limit		
Configuration	Telnet, web, ssh and console		
Upgrade	Web, DeviceManager		
Log	Local system log, remote log, and serial export of log. Power down saving of important logs.		
SMS Functions	Status query, restart		
Dial-on-demand	Dial-on-demand, data / SMS activation		
Network Management	Supports InHand DeviceManager, batch management Add the user experience plan to access The InHand Networks cloud platform to enjoy efficient and convenient services.		
SNMP	SNMP v1/v2c/v3, supports SNMP TRAP		
Traffic Management	Supports data traffic threshold, traffic statistics and traffic alarm		
Alarm	System restart alarm, LAN port online/offline alarm, data traffic alarm, SIM card failure alarm, etc.		
Maintenance Tools	Ping, route tracking, network speed test		
Status Query	System status, modem status, network connection status, and routing status		

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Ordering Guide

Model	Model code: IR305-<S>		
	<WMNN>: Cellular Type & Module	<WLAN/NA>: Wi-Fi	<S/NA>: Serial Port/ IO
IR305-LQ20-<WLAN/NA>-<S/NA>	(For China, LTE CAT 4) FDD: B1/B3/B5/B8 TDD: B34/B38/B39/B40/B41 WCDMA: B1/B5/B8 GSM: B3/B8MHz	WLAN: Wi-Fi <NA>: no Wi-Fi	S:1*RS232+1*RS485 <NA>: 4*IO
IR305-FQ58-<WLAN/NA>-<S/NA>	(For Europe & APAC, CAT 4) FDD:B1/ B3/ B7/ B8/ B20/B28A WCDMA:B1/B8 GSM:B3/ B8	WLAN: Wi-Fi <NA>: no Wi-Fi	S:1*RS232+1*RS485 <NA>: 4*IO
IR305-FQ39-<WLAN/NA>-<S/NA>	(For North America, AT&T, VzW, T-Mobile, LTE CAT 6) FDD: B2/B4/B5/B7/B12/B13/B25/B26/B29/B30/B66 WCDMA: B2/B4/B5	WLAN: Wi-Fi <NA>: no Wi-Fi	S:1*RS232+1*RS485 <NA>: 4*IO
IR305-FQ38-<WLAN/NA>-<S/NA>	(For North America, AT&T, VzW, LTE CAT 4) FDD: B2/B4/B5/B12/B13/B14/B66/B71 WCDMA: B2/B4/B5	WLAN: Wi-Fi <NA>: no Wi-Fi	S:1*RS232+1*RS485 <NA>: 4*IO
IR305-FQ78-<WLAN/NA>-<S/NA>	(For Austria, Latin America) FDD: B1/B2/B3/B4/B5/B7/B8/B28 TDD：B40 WCDMA: B1/B2/B5/B8 GSM：B2/B3/B5/B8	WLAN: Wi-Fi <NA>: no Wi-Fi	S:1*RS232+1*RS485 <NA>: 4*IO
IR305-FQ33-<WLAN/NA>-<S/NA>	(For North America, AT&T, VzW, LTE CAT 1) FDD: B2/B4/B5/B12/B13/B25/B26 WCDMA: B2/B4/B5	WLAN: Wi-Fi <NA>: no Wi-Fi	S:1*RS232+1*RS485 <NA>: 4*IO
IR305-FQ53-<WLAN/NA>-<S/NA>	(For Europe & APAC, CAT 1) FDD:B1/ B3/ B7/ B8/ B20/B28A WCDMA:B1/B8	WLAN: Wi-Fi <NA>: no Wi-Fi	S:1RS232+1RS485 <NA>: 4*IO
IR305-NRQ2-<WLAN/NA>-<S/NA>	China 5G 5G NR NSA: n41/n78/n79 5G NR SA: n1/n28*/n41/n77/n78/n79 FDD: B1/B3/B5/B8 TDD: B34/B38/B39/B40/B41 WCDMA: B1/B5/B8	WLAN: Wi-Fi <NA>: no Wi-Fi	S:1RS232+1RS485 <NA>: 4*IO
IR305-EN00-<WLAN/NA>-<S/NA>	NA	WLAN: Wi-Fi <NA>: no Wi-Fi	S:1RS232+1RS485 <NA>: 4*IO
Example:	IR305-LQ20-WLAN: Five Ethernet ports IR300 series cellular router, support IPSec / PPTP / L2TP / OPEN VPN, supports FDD, TDD, GSM and WCDMA networks, supports Wi-Fi AP & Client mode		

Note: Users are asked to join InHand User Experience Plan at fist time login. If user agreed to join, the router will connect to InHand DeviceManager portal. If users want to disable it, please go to Services->User Experience Plan to change the setting.

About accessories:
1. All part number is with a 4G or WiFi sucker antenna.If you need 4G rubber antenna, please order AANT090036; If you need WiFi rubber antenna, please order AANT060022;
2. All part number is with a lug mount bracket. If you need DIN rail mount bracket, please order AFIX000125

About Us

InHand Networks is a global leader of Industrial IoT, with a record of tremendous success following groundbreaking innovation since our inception in 2001.

InHand serves world-class partners and customers with industrial M2M routers, gateways, industrial Ethernet switches, rugged computers and IoT management platforms. We provide IoT solutions for various vertical markets including Smart Grid, Industrial Automation, Remote Machine Monitoring, Smart Vending, Smart City, Retail and more.

Proudly bearing the marks of both Rockwell Automation Technology Partner in Asia-Pacific and Schneider Electric Technology Partner, InHand Networks defines industrial innovation and reliability.

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