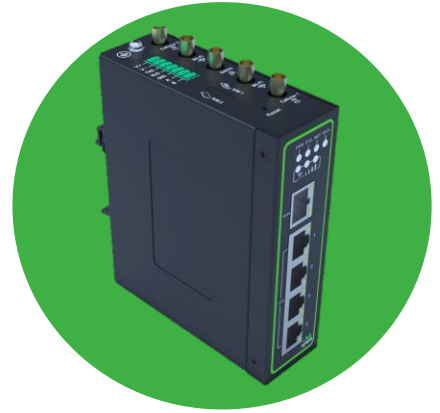Compact Industrial Router

4G LTE, Five Ethernet Ports, Dual SIM, Cloud Management, GNSS

# InRouter315

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 InRouter315(IR315) 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 IR315 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 robots – Industrial automatic factories & productions lines
Smart medical care	– Medical device networking and other applications

Application Case

Smart Locker

IR315

4G

Smart Locker Management Platform

DeviceManager Cloud
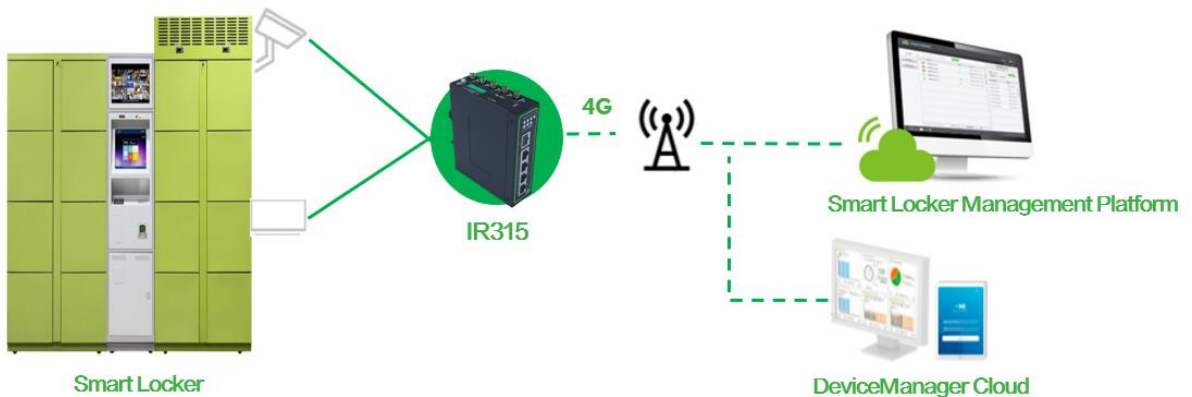
Features and Advantages

Uninterrupted network access

IR315 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 cellular access, LTE CAT1/CAT4/CAT6 standard, compatible with 2G/3G network.

- 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.

Concise and convenient cloud management

IR315 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! Build remote connections for efficient operation and maintenance.

"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-backup : enabling wired, cellular and Wi-Fi to make backup mutually；

- Dual SIM failover, automatically switches to the more stable carrier networks；

- VRRP hot backup mechanism : redundant backups.

- Multi-layer 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, L2TP, PPTP, OPEN VPN, WireGuard, ZeroTier, 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.

Build remote connections for efficient operation and maintenance

IR315 with InHand InConnect cloud connection service, users can quickly and conveniently realize remote maintenance and remote monitoring onsite devices. Diagnose, debug, program and respond to on-site faults and locate problems for distributed devices through remote connections to reduce loss.

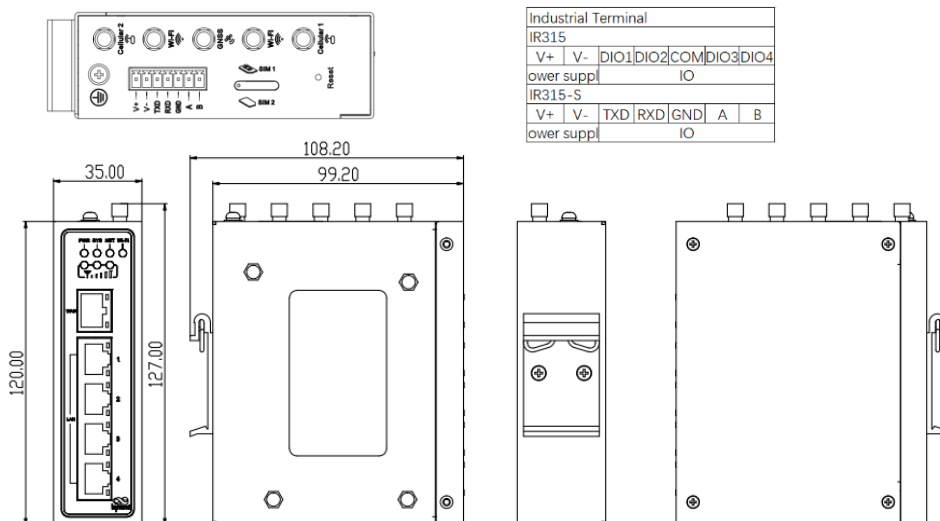## Abundant industrial ports, covering IoT scenarios

With rich industrial interfaces, the IR315 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).

- GNSS: support GPS/ GLONASS /BeiDou /Galileo/ QZSS (positioning accuracy is 2.5 meter)

Industrial-grade design

Metal shell, IP30 protection. EMC level 3. Wide operating temperature: -20℃~70℃. IR315 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)

Industrial Terminal							
IR315							
V+	V-	DIO1	DIO2	COM	DIO3	DIO4	
ower suppl		IO					
IR315-S							
V+	V-	TXD	RXD	GND	A	B	
ower suppl		IO					

35.00
108.20
99.20
120.00
127.00

Production Specifications

InRouter 315 Hardware Specifications

Hardware Platform

CPU	580MHz
RAM	128MB
FLASH	64MB SPI

Interface

Ethernet Port	5*10/100Mbps fast Ethernet port, RJ45，WAN/LAN/VLAN port，1.5KV network isolation transformer protection
Power Supply	DC9~36V, over-current protection, anti-reverse connection, 2 PIN industrial terminal
IO (Optional)	Support 4 x IO (DO or IO can be configured)
Serial port (Optional)	1 x RS232 + 1 x RS485
*Alternatives for I/O or Serial port	
Reset	Pinhole reset button
SIM Card	1 x Drawer-type slot, support dual-NANO SIM
Wi-Fi (Optional)	IEEE 802.11b/g/n，300Mbps
GNSS (Optional)	Support GPS/ GLONASS /BeiDou /Galileo/ QZSS Positioning accuracy is 2.5 meter
Antenna Connector	1 x SMA for LTE, 2 x RP-SMA for Wi-Fi, 1 x SMA for GNSS
Ground Terminal	Supports

Mechanical Specs

Dimensions	127x108.2x 35mm	Weight	454g
Installation	Din-rail	Protection Rating	IP30
Housing	Metal	Cooling	Fanless

Power rate

Standby power	120mA~200mA@12V
Working power	150mA~320mA@12V
Peak power	320mA@12V

Wi-Fi Transmit Power

Transmit Power	802.11b:16dBm+/−2dBm(11Mbps) 802.11g:16dBm+/−2dBm(54Mbps) 802.11n@2.4GHz:16dBm +/−2dBm(HT20MCS7) 802.11n@2.4GHz:16dBm +/−2dBm(HT40MCS7)

Ambient Environment

Storage Temperature	−40 ~ 85℃	Operating Temperature	−20~ 70℃
Ambient Humidity	5~95% (no condensing)		

Indicator

LED	Power, System, Cellular, Wi-Fi Signal

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, CB, UKCA, E−MARK

InRouter 315 Software Specifications

Network Connection

Network Access	APN, VPDN
Access Authentication	CHAP/PAP
Network Type	GSM/GPRS/EDGE, UMTS/HSPA+/EVDO/TD−SCDMA/, TDD LTE/FDD LTE (Please refer to the Ordering Guide for frequencies)
LAN protocol	ARP, Ethernet
WAN protocol	Static IP, DHCP, PPPoE

Network Protocol

IP Application	IPv4, Ping, Trace, DHCP Server, DHCP Relay, DHCP Client, DNS relay, DDNS, Telnet, IP Passthrough
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，WireGuard，ZeroTier 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
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.)

Intelligence

Integrated DTU Functions	TCP, UDP transparent transmission mode, TCP Server mode Supports conversion of Modbus RTU to Modbus TCP bridge Supports DCUDP, DCTCP mode

Network Management

QoS Management	Bandwidth limit, IP speed limit
Configuration	Telnet, Web, SSH and console
Update	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

InHand Networks

Ordering Guide

Model code: IR315-<WMNN>-<WLAN/NA>-<S/NA>-<G/NA>				
Model	**<WMNN>: Cellular Type & Module**	**<WLAN/NA>: Wi-Fi**	**<S/NA>: Serial/IO**	**G: GNSS**
IR315-NRQ2-<WLAN/NA>-<S/NA>	(For China 5G) 5G NR NSA n41 / n77 / n78 / n79 5G NR SA n1 / n3 / n5* / n8 / n28 / n41 / n77 / n78 / n79 LTE-FDD B1/ B3/ B5/ B8 LTE-TDD B34/ B38/ B39/ B40/ B41 WCDMA B1/ B5/ B8	WLAN: Wi-Fi <NA>: no Wi-Fi	S: 1*RS232+1*RS485 <NA>: 4*IO	NA
IR315-LQ20-<WLAN/NA>-<S/NA>	(For China CAT4) FDD: B1/ B3/ B5/ B8 TDD: B34/ B38/ B39/ B40/ B41 WCDMA: B1/ B5/ B8 GSM: B3/ B8	WLAN: Wi-Fi <NA>: no Wi-Fi	S: 1*RS232+1*RS485 <NA>: 4*IO	NA
IR315-FQ58-< WLAN /NA>-<S/NA>	(For Europe & APAC, CAT 4) FDD: B1/ B3/ B5/ B7/ B8/ B20 /B28 TDD: B38/ B40/ B41 WCDMA: B1/ B5/ B8 GSM: B3/ B8	WLAN: Wi-Fi <NA>: no Wi-Fi	S: 1*RS232+1*RS485 <NA>: 4*IO	NA
IR315-FQ58-< WLAN /NA>-<S/NA>-G	(For Europe & APAC, CAT 4) FDD: B1/ B3/ B7/ B8/ B20/ B28A TDD: B38/ B40/ B41 WCDMA: B1/ B8 GSM: B3/ B8	WLAN: Wi-Fi <NA>: no Wi-Fi	S: 1*RS232+1*RS485 <NA>: 4*IO	G: GNSS
IR315-FQ53-< WLAN /NA>-<S/NA>	(For Europe & APAC, CAT 1) FDD: B1/ B3/ B7/ B8/ B20/ B28 TDD: B38/ B40/ B41 GSM: B2/ B3/ B5/ B8	WLAN: Wi-Fi <NA>: no Wi-Fi	S: 1*RS232+1*RS485 <NA>: 4*IO	NA
IR315-FQ78-<WLAN/NA>-<S/NA>	(For Australia, 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	NA
IR315-EN00-<WLAN/NA>-<S/NA>	NA	WLAN: Wi-Fi <NA>: no Wi-Fi	S: 1*RS232+1*RS485 <NA>: 4*IO	NA

Example: IR315-LQ20-WLAN: Five Ethernet ports IR315 series cellular router with Wi-Fi, support IPSec / PPTP / L2TP / OPEN VPN.

Note: Users are asked to join InHand User Experience Plan at first 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 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.

InHand Networks

43671 Trade Center Place, Suite 100, Dulles, VA 20166 USA
T: +1 (703) 348-2988
E: info@inhandnetworks.com
www.inhandnetworks.com