



InHand Networks



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# InRouter615-S Series

## Enhanced Industrial LTE Router

The InRouter615-S series offers a compact and industrial-grade solution designed for IoT and field device connectivity. It combines advanced networking features, strong security, and reliable connectivity for various industrial and commercial applications.

With embedded hardware & software watchdogs and multi-layer link detection mechanism, the router safeguards stable and highly-reliable communications for field sites, especially unattended sites. It also supports InHand DeviceManager to facilitate remote network management.

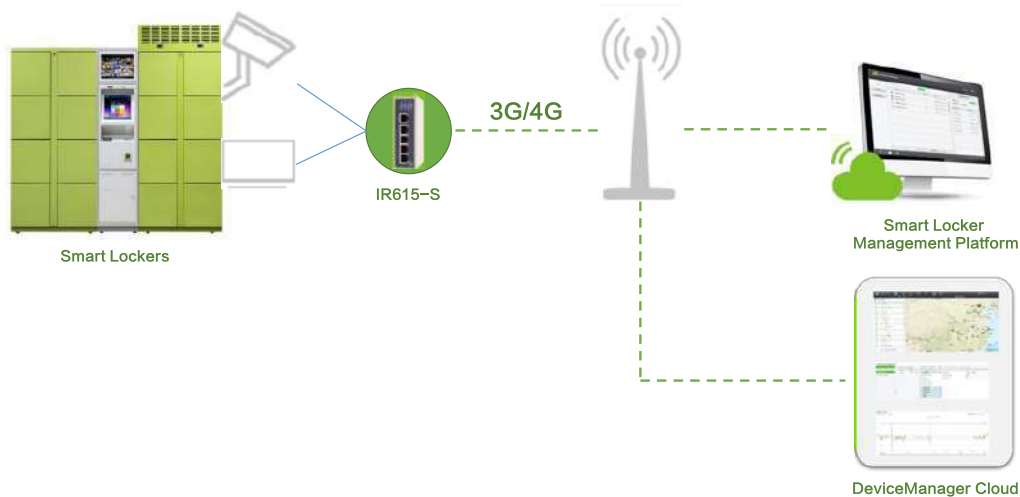
Multiple VPN encryption technologies can ensure secure data transmission, preventing malicious data access and tampering. The user-friendly WEB interface drastically reduces the difficulty of network configuration.

With easy network access, ease of use, and remote management functions, the router provides reliable high-speed data channel for things in the true sense of IoT.

### Applications

- The IR615-S is ideal for various industries, including:
  - **Smart Grids** and Utilities.
  - **Industrial Automation** and Remote Machine Monitoring.
  - **Smart Cities** and Transportation.
  - **Retail** and Vending Solutions.
  - Security Surveillance and Emergency Services.

## Application Case



## Key Features and Advantages

- + Supports 4G LTE CAT4 high-speed network, as well LTE CAT1 and CAT-M low-rate networks
- + Supports WLAN
- + 5 Ethernet ports, WAN/LAN/VLAN
- + Multiple VPN functions
- + Multiple built-in link redundancies ensure uninterrupted communications
- + Load balancing, effectively increases bandwidth
- + Supports SNMP and InHand Device Manager cloud platform, for efficient central network management
- + User experience plan, enjoy efficient and convenient service
- + Supports high-efficiency deployment of large-scale device networks
- + Compact sized, easy to fit
- + Industrial-grade, ready for challenging conditions

### Versatile Connectivity

- **Supports LTE CAT4, CAT1, and CAT-M** for high-speed and low-rate networks, catering to diverse application needs:
  - LTE CAT4: 150/50 Mbps (downlink/uplink).
  - LTE CAT1: 10/5 Mbps.
  - LTE CAT-M: 375/300 Kbps.
- **Dual SIM card design** allows seamless network switching between carriers.
- **Wi-Fi AP and STA modes** enable secure wireless networks with 3G/4G and Wi-Fi mutual backup for redundancy.
- **5 Ethernet Ports** supporting WAN/LAN/VLAN functionality.

### Uninterrupted Internet Access

- **Link Redundancy:**
  - Failover between **3G/4G, Wi-Fi, and wired connections** ensures constant communication.
  - **Load balancing** optimizes bandwidth utilization.
  - **RRRP (Virtual Router Redundancy Protocol)** enables hot backups between multiple routers.
- **High Reliability:**
  - Link layer, PPP layer, and VPN tunnel detection maintain stable and seamless connections.
  - **Self-recovery mechanisms** via hardware watchdog ensure device uptime.

### Strong Security

- **Transmission Security:** Supports advanced VPN protocols like IPsec, L2TP, PPTP, OPEN VPN, DMVPN, GRE, and CA certification.
- **Network Protection:**
  - SPI stateful detection, SSH, intrusion prevention, DDoS defense, and IP-MAC binding prevent external attacks.
- **Access Security:** User authorization hierarchies manage secure access for various roles.

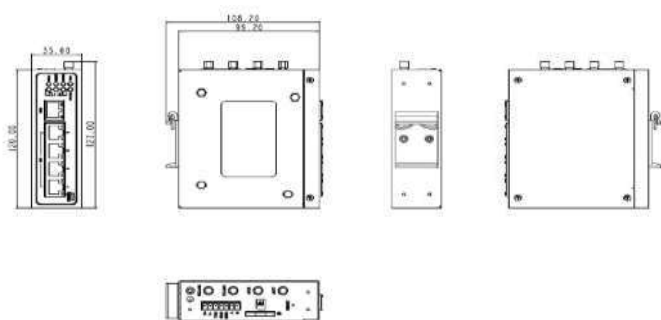
### Centralized Network Management

- **InHand DeviceManager (DM) Cloud Platform:**
  - Remote monitoring and management of large-scale networks.
  - Batch device configuration for efficient deployment.
  - Enhanced user experience with efficient maintenance services.

### Industrial-Grade Durability

- **Robust Design:**
  - Metal housing with **IP30 protection rating** and Ethernet ports featuring 1.5KV isolation protection.
  - **Wide operating temperature range:** -20°C to 70°C.
  - **Wide voltage input:** DC 9-36V for versatile power options.
- **EMC Level 3 Protection** ensures durability in harsh environments.

## Dimensions (mm)



DIN-Rail mounting diagram. Please refer to "Quick Installation Guide" for wall/lug mounting diagram.

7-PIN Industrial Terminal Interface Definition		
No.	Definition	Description
1	V+	Positive electrode
2	V-	Negative electrode
3	TXD	Serial RS232 sending
4	RXD	Serial RS232 receiving
5	GND	Serial RS232 signal ground
6	A	Serial RS485 +
7	B	Serial RS485-

# Product Specifications

InRouter615-S Hardware Specifications			
Interface			
Ethernet Port	1*10/100Mbps fast Ethernet WAN port 4*10/100Mbps fast Ethernet WLAN ports 1.5KV network isolation protection		
Power Supply	DC9-26V, 36V expandable		
Industrial Serial Port	RS-232/485 x 1 ESD protection: 15KV		
SIM Card	Drawer-type card slot x 1 Part models: Drawer-type card slot x 2		
Reset	Pinhole reset button		
Antenna Connector	3G/4G: SMA x 2 WLAN: RP-SMA x 2		
Ground Terminal	Has ground terminal		
Mechanical Specs			
Dimensions (mm)	127x108.2x35mm	Weight (g)	440g
Installation Method	DIN-Rail Optional: Lugs/wall mounting	Protection Rating	IP30
Housing	Metal housing	Cooling	Fanless
Power Rate			
Working Power	150mA-320mA@12V	Standby Power	120mA-200mA@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°C	Operating Temperature	-20 ~ 70°C
Ambient Humidity	5 ~ 95% (non-condensing)		
Indicator			
LED	POWER, STATUS, WARN, ERROR, WLAN, LINK, signal indicator		
EMC Index			
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 3)		
Physical Specs			
Shockproof	IEC60068-2-27	Vibration Resistance	IEC60068-2-6
Free Fall	IEC60068-2-32		
Certification			
CE, FCC, PTCRB, IC, IMDA, RCM, Verizon, AT&T, T-Mobile, UL, Class I Division 2, E-Mark, JATE/TELEC			

InRouter615-S Software Specifications			
Network Connection			
Network Access	APN, VPDN, supports dual-APN access	Access Authentication	CHAP/PAP authentication
LAN Protocol	ARP, Ethernet	WAN Protocol	Static IP, DHCP, PPPoE, PPP
Network Type	GSM/GPRS/EDGE, UMTS/HSPA+/EVDO/TD-SCDMA, TDD LTE/FDD LTE		
IP Application	Ping, Trace, DHCP Server, DHCP Relay, DHCP Client, DNS relay, DDNS, Telnet, IPPT		
IP Routing	Static routing, OSPF	NAT	Support network address translation
Network Security			
Firewall	Stateful Packet Inspection (SPI), DoS attack defense; Multicast filter/Ping packet, Access Control List (ACL); Content URL filter, port mapping, virtual IP mapping, IP/MAC binding		
Data Security	IPsec (IKEv1/IKEv2)/L2TP/PPTP/GRE/OPEN VPN/DMVPN/CA digital certificate		
Reliability			
Backup	Dual-SIM mutual backup, VRRP hot backup, link backup		
Link detection	Send heartbeat packets, auto redial when disconnected		
Embedded Watchdog	Device operation self-detection, auto recover from malfunctions		
WLAN (Optional)			
Protocol & Standard	IEEE 802.11b/g/n	Transmission Rate	Up to 300Mbps
Working Mode	AP and STA modes		
Security	Open system, shared key, WPA/WPA2 certification WEP/TKIP/AES encryption		
Transmission Distance	100m (actual transmission distance depends on site environment)		
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; Supports for up to 15 data centers		
Network Management			
QoS Management	Supports bandwidth limit, IP speed limit		
Configuration Method	Telnet, web, ssh and console	Upgrade Method	Web, Device Manager
Logs	Local system logs, remote logs, and serial export of logs. Power down saving of important logs.		
SMS Functions	Status query, configuration, restart	Dial-on-demand	Dial-on-demand, data / SMS activation
Network Management	Supports InHand DeviceManager, batch management Add user experience plan, enjoy efficient and convenient service.		
Simple Network Management	SNMP v1/v2c/v3, supports SNMP TRAP		
Traffic Management	Supports data traffic threshold setting, supports traffic statistics and traffic alarm		
Alarms	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		

## Ordering Guide

Model code: IR615-S-<WMNN>-<WLAN/NA>-<DS/NA>					
Model	Region (Operator)	<WMNN>: Cellular Type & Module U-UMTS(HSPA), L-LTE single mode, L3-LTE triple-mode, L5-LTE 5-mode, L7-LTE 7-mode	<WLAN/NA>: WLAN	<DS/NA>: Dual SIM	
IR615-S-L7/(TL01/60522)-<WLAN/NA>	China	LTE CAT4	LTE-FDD Band 1/3/5/8 LTE-TDD Band 38/39/40/41 TD-SCDMA Band 34/39 UMTS (DC-HSPA+) Band 1/8 EVDO 800MHz CDMA-1x 800MHz EDGE/GPRS/GSM 850/900/1800/1900MHz	WLAN: Wi-Fi <NA>: no Wi-Fi	Dual SIM
IR615-S-L3--<WLAN/NA>--<FQ58/60726>	Europe & APAC	LTE CAT4	LTE-FDD Band 1/3/7/8/20/28A TDD: B28/B40/B41 WCDMA: B1/B8 GSM: B3/8	WLAN: Wi-Fi <NA>: no Wi-Fi	Dual SIM
IR615-S-FQ38-<WLAN/NA>	North America (Verizon Wireless)	LTE CAT4	LTE-FDD Band 2/4/5/12/13/14/66/71 UMTS(DC-HSPA+) Band 2/4/5	WLAN: Wi-Fi <NA>: no Wi-Fi	Dual SIM
IR615-S-FQ53-<WLAN/NA>	EMEA	LTE CAT1	FDD: B1/B3/B5/B7/B8/B20/B28 TDD: B38/B40/B41 GSM: B2/B3/B5/B8	WLAN: Wi-Fi <NA>: no Wi-Fi	Dual SIM
IR615-S-FQ78-<WLAN/NA>	Australia & South America	LTE CAT4	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	Dual SIM
IR615-S-FQ88-<WLAN/NA>	Japan	LTE CAT4	FDD:B1/ B3/ B8/ B18/ B19/B26 TDD:B41 WCDMA:B1/B6/B8/B19 GSM:B2/B3/B5/B8	WLAN: Wi-Fi <NA>: no Wi-Fi	Dual SIM
IR615-S-FS39-<WLAN/NA>	North America (T-Mobile, Verizon, AT&T)	LTE CAT6	LTE-FDD Band 2/4/5/12/13/29 UMTS/HSPA+ Band 2/4/5 GSM/GPRS/EDGE 850/1000/1800/1900Mhz	WLAN: Wi-Fi <NA>: no Wi-Fi	Dual SIM
IR615-S-EN00-<WLAN/NA>	Global		No cellular module	WLAN: Wi-Fi <NA>: no Wi-Fi	Single SIM
<b>Example:</b>	IR615-S-L3-WLAN: Five Ethernet ports IR615-S series cellular router, supports IPsec/PPTP/L2TP/OPEN VPN, 4G LTE CAT4, supports Wi-Fi AP&STA modes, one serial port with RS232 or RS485 mode				

## About InHand Networks

Founded in 2001, InHand Networks is a leader in Industrial IoT solutions. The company delivers reliable and innovative products, including M2M routers, gateways, industrial Ethernet switches, rugged computers, and IoT platforms. As a trusted technology partner of Rockwell Automation and Schneider Electric, InHand Networks provides solutions for industries such as Smart Grid, Industrial Automation, Smart Vending, and Retail, setting the benchmark for industrial IoT innovation and reliability.



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