InHand Networks

With 3G/4G，Wi-Fi and Link Backup

# InRouter615-S Series

Enhanced Industrial LTE Router

- The InRouter615-S (also IR615-S) is a series of IoT router that supports 3G/4G, Wi-Fi and VPN. It provides easy network access for field devices with 3G/4G wireless WAN and Wi-Fi wireless LAN support, helps to build device networks scaling from tens up to tens of thousands.

- 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 Device Manager 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

Applicable to a wide range of applications, including largescale networkin：

- Express parcel cabinet
- Branch networking，Commercial networking
- Public utility: heating station, gas valve room, water treatment
- Security surveillance and criminal investigation
- Smart transportation
- Smart grid
- Smart manufacturing, Photovoltaic energy
- Industrial automation, etc

Application Case

智能快递柜现场

4G/3G

快递柜智能云平台

DeviceManager Cloud
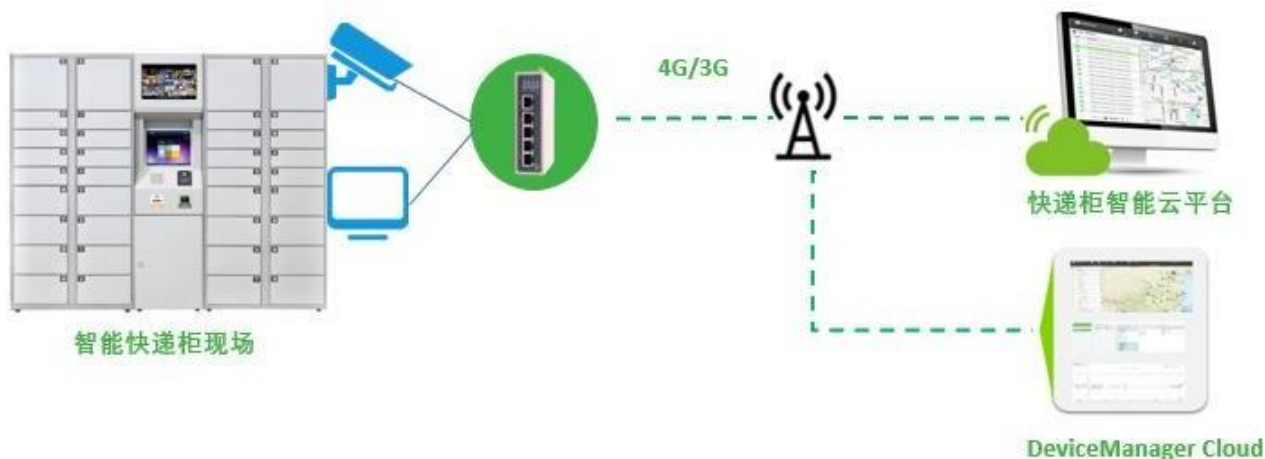
Features and Advantages

+ 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

Uninterrupted Internet Access

Supports multiple fast LTE WAN networks. Gets device connected through the global covering 3G/4G network regardless of where the device is located. Three LTE network types to choose: LTE CAT4 (150/50Mbps down/ uplink), CAT1 (10/5Mbps down/uplink), and CAT-M (375/300Kbps down/uplink).

Supports Wi-Fi, both AP & STA modes, to set up secure wireless networks easily. Support 3G/4G and Wi-Fi mutual-backup, further ensuring uninterrupted transmission by providing redundant communication links.

Strong Security Protection

Transmission security: supports IPsec VPN, L2TP, PPTP, OPEN VPN, DMVPN, GRE, and CA certificate.

Network protection: supports SPI stateful detection, Secure Shell (SSH), intrusion protection (forbidden ping), DDoS defense, attack defense, IP-MAC binding, etc. to protect against external attacks.

Access security: supports user hierarchical authorization, implements secure access management by giving different roles different permissions.

High Reliability and Stability

Link layer detection: detects link conditions, auto redial when dropped off to maintain link connection.

PPP layer detection: maintains connection to carrier network side, prevents forced hibernation, and keep network link smooth.

VPN tunnel detection: maintains stable connection of VPN tunnels and continuous data transmission.

Device fault self-recovery: embedded hardware watchdog, self-recovers from malfunctions, maintaining high device availability.

Link Redundancy

A variety of link redundancy designs ensure uninterrupted field communications.

Supports load balancing, making better use of bandwidth.

Failover between 3G/4G, Wi-Fi and wired connection.

Dual SIM card design can support network switching between different carriers.

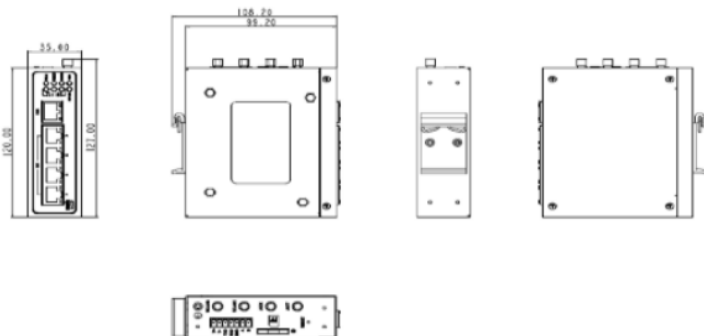VRRP hot backup function to realize link backup between multiple routers.

Network Management Cloud Platform for Centralized Management and Deployment

Supports InHand Device Manager (DM) cloud platform to facilitate remote monitoring and central management of large-scale device networks. Batch configures large numbers of devices, improve network deployment and maintenance efficiency. Add user experience plan, enjoy efficient and convenient service

Industrial-grade Design

Metal housing, IP30 protection rating. Reach level 3 on EMC indexes. Ethernet port supports 1.5KV isolation protection. Wide operating temperature: -20℃ ~ 70℃. Wide voltage input: DC9 ~ 36V.

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-

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Production Specifications

InRouter 615-S Hardware Specifications

Interface

Ethernet Port	1*10/100Mbps fast Ethernet WAN port 4*10/100Mbps fast Ethernet LAN port 1.5KV network isolation protection
Power Supply	DC9~26V, 36V expandable
Industrial Serial port	RS232/484 *1
	ESD Protection 15KV
Reset	Pinhole reset button
SIM Card	1* Drawer-type slot Part of the models support 2*drawer-type slots
Wi-Fi (Optional)	IEEE 802.11b/g/n，300Mbps
Antenna Connector	3G/4G: SMA*2 WLAN： RP-SMA*2
Ground Terminal	HAS Ground Terminal

Mechanical Specs

Dimensions	127 * 108.2 * 35mm	Weight	440g
Installation	Din-rail Optional：Lugs/Wall mounting	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, STATUS, WARN, ERROR, WLAN, LINK, signal indicator

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, UKCA, E-MARK, FCC, IC, PTCRB, AT&T, Verizon, RCM, CCC, SRRC, SDPPI, IMDA, UL, C1D2, MIC&JATE

InRouter 615-S Software Specifications

Network Connection

Network Access	APN, VPDN, Support dual-APN access
Access Authentication	CHAP/PAP
Network Type	GSM/GPRS/EDGE, UMTS/HSPA+/EVDO/TD-SCDMA, TDD LTE/FDD LTE
LAN protocol	ARP, Ethernet
WAN protocol	Static IP, DHCP, PPPoE, PPP

Network Protocol

IP Application	Ping, Trace, DHCP Server, DHCP Relay, DHCP Client, DNS relay, DDNS, Telnet, IPPT
IP Routing	Static routing, OSPF
NAT	Supports network address translation

Nerwork 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	IEEE 802.11b/g/n
Rate	Up to 300Mbps
Working Mode	AP and STA Mode
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 Supports for up to 15 data centers

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, 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.
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 code: IR615−S−<WMNN>−<WLAN/NA>−<DS/NA>			
Model	**<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>: Wi−Fi**	**<DS/NA>: Dual SIM**
IR615−S−L7−<WLAN/NA>	(For China 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>	(For Europe & APAC CAT4) LTE−FDD Band 1/3/7/8/20/28A TDD: B38/B40/B41 WCDMA: B1/B8 GSM: B3/8	WLAN: Wi−Fi <NA>: no Wi−Fi	Dual SIM
IR615−S−FQ53−<WLAN/NA>	(For EMEA, CAT 1) 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, CAT 1) 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, CAT 4) 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 CAT6) LTE−FDD Band2/4/5/12/13/29 UMTS/HSPA+ Band 2/4/5 GSM/GPRS/EDGE 850/1000/1800/1900Mhz	WLAN: Wi−Fi <NA>: no Wi−Fi	Dual SIM
IR315−EN00−<WLAN/NA>−S	Global	WLAN: Wi−Fi <NA>: no Wi−Fi	N/A

Example:
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 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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