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 DeviceManager to facilitate remote network management.

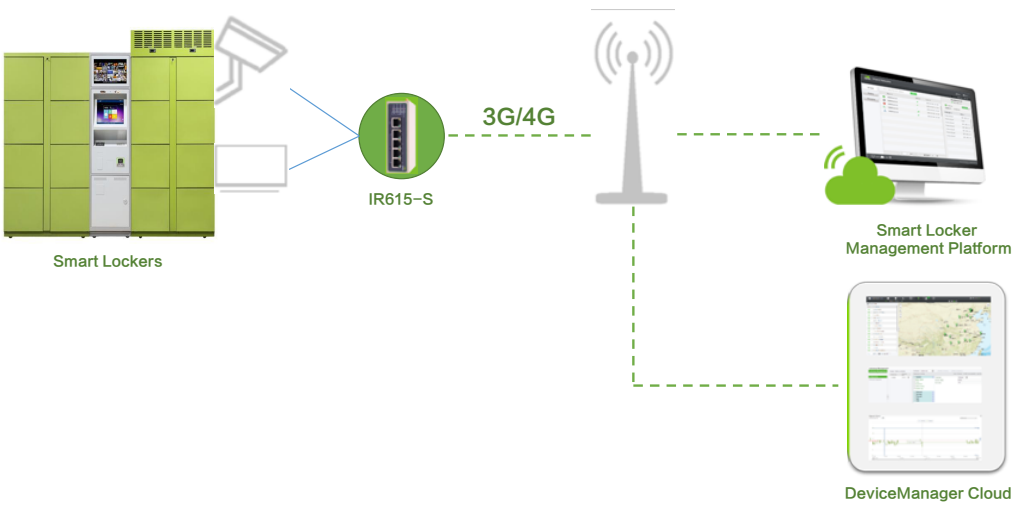
Multiple VPN encryption technologies can ensure secure data transmission, preventing malicious data access and tampering. The user-friendly WEB interface drastically reduces the difficulty of network configuration.

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.

Applicable to a wide range of applications, including large-scale networking:

- 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



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

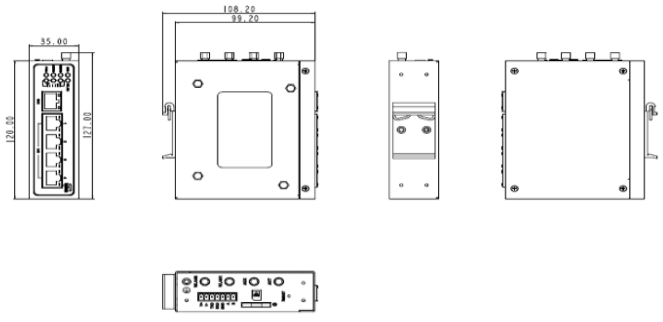
Network management cloud platform for centralized management and deployment

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°C~70°C. 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-

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(HT 20MCS7) 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 VPN /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	Model code: IR615-S-<WMNN>-<WLAN/NA>-<DS/NA>				
	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-L5/(TH09/60218)-<WLAN/NA>-<DS/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+） 1/5/8/9 EDGE/GPRS/GSM 900/1800MHz	WLAN: Wi-Fi <NA>: no Wi-Fi	<DS>: Dual SIM <NA>: Single 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/(FH20/60220)-<WLAN/NA>--<DS/NA>	Europe & APAC	LTE CAT4	LTE-FDD Band 1/2/3/4/5/7/8/20 UMTS(DC-HSPA+) Band 1/2/5/8 EDGE/GPRS/GSM 850/900/1800/1900MHz	WLAN: Wi-Fi <NA>: no Wi-Fi	<DS>: Dual SIM <NA>: Single SIM
IR615-S-FQ38-<WLAN/NA>	North America (Verizon Wireless)	LTE CAT4	LTE-FDD Band2/4/5/12/13/14/66/71 UMTS(DC-HSPA+) Band 2/4/5	WLAN: Wi-Fi <NA>: no Wi-Fi	Dual SIM
IR615-S-FQ58-<WLAN/NA>	Europe & APAC	LTE CAT4	FDD: B1/B3/B7/B8/B20/B28A TDD: B38/B40/B41 WCDMA: B1/B8 GSM: B3/8	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 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
IR615-S-FB53-<WLAN/NA>-<DS/NA>	Europe	LTE CAT1	LTE-FDD CAT1 Band 3/7/20 EDGE/GPRS/GSM 900/1800MHz	WLAN: Wi-Fi <NA>: no Wi-Fi	<DS>: Dual SIM <NA>: Single SIM
IR615-S-FB63-<WLAN/NA>	APAC	LTE CAT1	LTE-FDD CAT1 Band 3/8/28 UMTS(DC-HSPA+) 2100	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
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.

InHand Networks

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

File no.: Version 2.8 March 2021 © 2021 InHand Networks Inc. All rights reserved.
InHand Networks Inc. reserves the right to update or modify this document at any time without prior notice.