Reliable, Secure, Cloud Managed, Lightweight AI Accelerated Edge Computer

EC942 **Series**
Embrace Edge AI, Empower Industrial Digitalization

The EC942 series edge computer is a lightweight AI accelerated edge computer developed for industrial IoT applications. With its powerful edge computing capability, 1.0 TOPS AI computing power, comprehensive security, wireless access services and other characteristics, the EC942 can support device networking of up to 10,000 units, providing high-speed data channels for TRUE device informatization.

The EC942 is providing a powerful computing platform with an ARM Cortex-A55@2.0 GHz quad-core processor, 4GB RAM and 16GB eMMC FLASH. Based on Debian, the EC942 provides a secondary development platform with support for C/C++/Java/Python/.Net/JavaScript,etc, which is easy for users to develop and port applications.

The EC942 supports Secure Boot, TPM,etc, to ensure the security of user software and data. With the use of the built-in DeviceSupervisor™ Agent, data collection, processing, and uploading them to the cloud is easier than ever without any programming. In addition, the EC942 provides uninterrupted Internet access for machines over ubiquitous the globally deployed LTE wireless network and a variety of broadband services.

Excellent performance, easy for deployment and perfect functions for remote management make the EC900 stand out of the device information era.

The EC900 series is ideal for data collection and monitoring of equipment on distributed unattended sites for a wide range of industries, e.g.:

- Smart factory
- Smart Grid
- Smart City
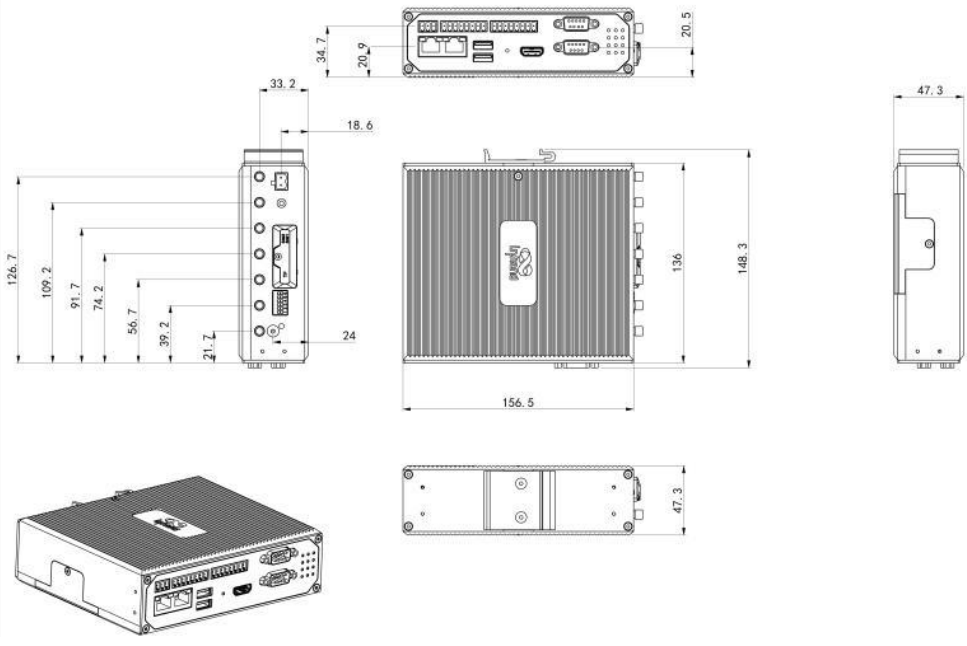- Smart building
- Green energy
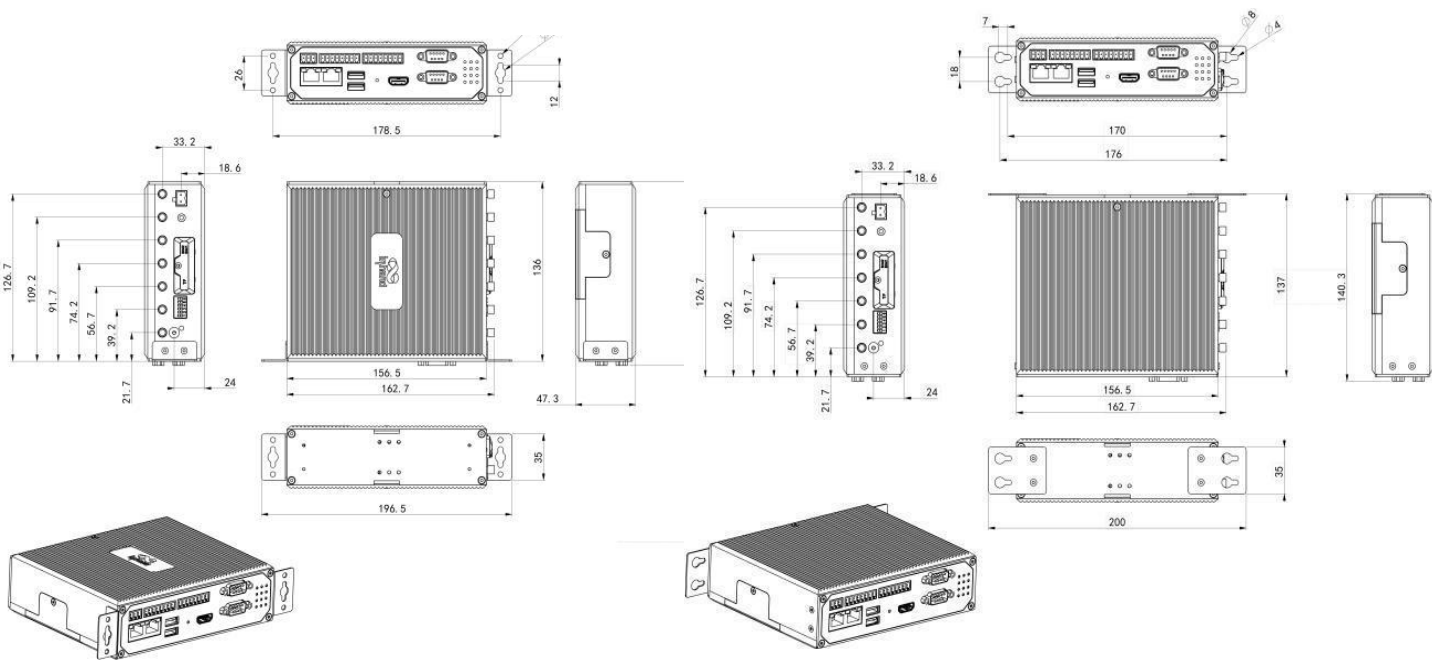- Environment, etc.

Application
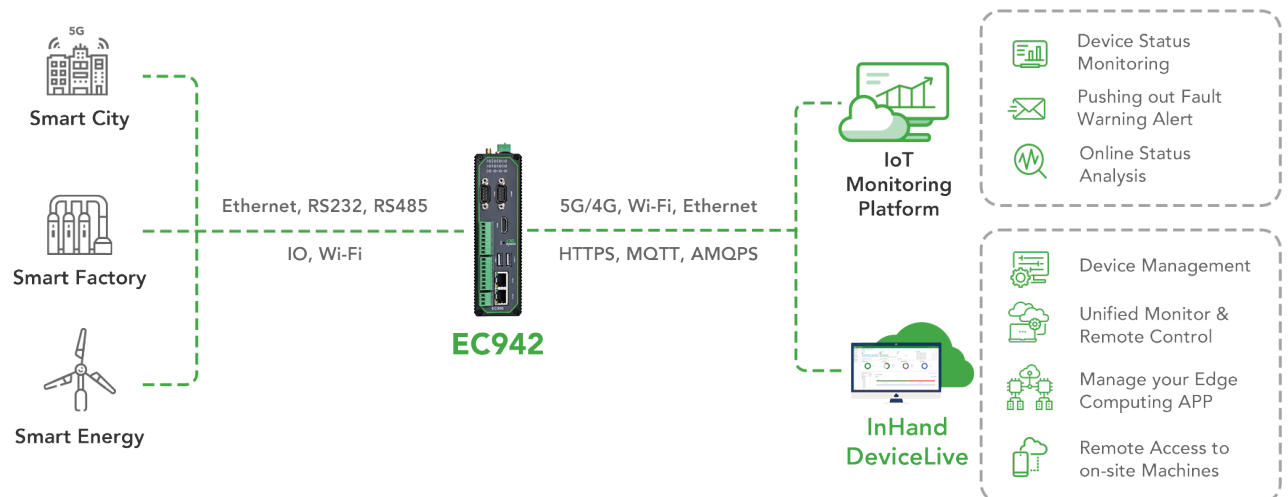
Features and Advantages

Powerful Edge computing capabilities, intelligent data processing

- The ARM Cortex-A55@2.0GHz quad-core processor provides a powerful computing platform;

- Built-in Mali G52 2EE GPU and discrete NPU, up to 1.0 TOPS AI computing power;

- With 4GB RAM and 16GB eMMC FLASH, and supports MicroSD for storage expansion.

Multiple interfaces to meet multiple scenes

- Standard: 2*10/100/1000Mbps Ethernet port

- Standard: 2*RS232/RS485/RS422

- Standard: 1*HDMI2.0

- Optional: Other ports optional: 4*DI, 4*DO, I/O, Wi-Fi 5, BLE 4.2, GPS, CAN, etc.

Fully Industrial-grade design, fit for harsh industrial environments

- Design as industrial grade product with industrial grade modules.

- EMC level 3, IP30, with -20℃~70℃ wide operating temperatures, +12~48VDC wide voltage power inputs, to tolerate the extreme conditions and to work in the environments with high levels of shock and vibration for industrial sites.

Linux distribution, easy for secondary development

- Linux Debian OS provides a flexible and open platform for free programming in a variety of high-level languages such as Java/Python/.Net/JavaScript, etc., with Linux Distro Debian, you can well leverage the benefits of Linux to improve your development efficiency and effectiveness

Complete security protection, ensuring privacy of software and data

- Linux Patch Management & Vulnerability Remediation helps to keep systems secure.

- Supports Secure Boot to prevent malware attacks.

- Supports TPM 2.0, enables greater encryption flexibility, to improve the security of your data.

InHand DeviceLive Cloud service helps you easily achieve batch deployment and maintenance

- Cloud-based device deployments and configurations make operation and management fast and easy.

- Centralized monitoring of EC900 with graphic display of devices operation data leads to efficient device management and troubleshooting.

- True 'zero touch' with a safe and reliable remote access channel for PLCs reduces travel frequency and improve maintenance efficiency.

Built-in DeviceSupervisor™ Agent service for easy data to cloud

- With simple configuration no extra programming, the built-in DeviceSupervisor™ collects data from mainstream industrial equipment and easily upload it to the cloud platform.

- Pre-process the data locally to reduce upload data traffic, reduce the pressure on the cloud, and lower operating costs.

- Mainstream industrial protocols supported, including Modbus, IEC-60870-5-101/104, OPC-UA, ISO on TCP, Mitsubishi MC 1E/3C/3E/3C Over TCP, etc.

- Supports docking with major public IoT cloud platforms such as Amazon AWS, Microsoft AZURE, Alibaba Cloud, etc., to provide you with the best IoT cloud solutions and services.

Uninterrupted Internet access from anywhere

- Global 4G LTE or 5G access guaranteed. With InHand's decades of cellular network communication professional experience, you will obtain high availability Internet access even in sites without wired networks.

- Gigabit Ethernet and Wi-Fi provide more connection options, the mutual connection backup guarantees smooth Internet access among wired, cellular and wi-fi forms.

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Dimensions (mm)

EC900 DIN Rail Mounting

EC900 Wall Mounting
A*

EC900 Wall Mounting
B*

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Product Specifications

Hardware Specifications	
Item	EC942
Hardware Platform	
CPU	Quad-core Cortex-A55@2.0GHz
RAM	4GB
FLASH	16GB eMMC
Interfaces	
EtherNet Port	2*10/100/1000Mbps Ethernet port
Serial Port	2*RS-232/485/422, DB9
I/O (Optional)	4*DI, 4*DO
CAN (Optional)	CAN 2.0A/B
Wi-Fi (Optional)	STA, 802.11ac/a/b/g/n, 2.4G/5G dual band
Bluetooth (Optional)	BLE 4.2
GPS (Optional)	Supports GPS, Beidou, and GLONASS positioning
USB	USB 2.0, 2*TypeA, 1*TypeC
HDMI	1*HDMI2.0
Expansion Interface	1*mSATA
Reset Button	Pinhole reset button
SIM Card	2*MicroSIM
TF Card	Supports Micro SD
Security	
TPM (Optional)	Integrated TPM chip, TPM v2.0

Mechanical Feature			
Installation	DIN-rail, wall mounting	Protection Rating	IP30
Housing	Metal	Weights	810g
Dimensions	47.3*162.7*148.3mm		

Power Supply	
Power Input	DC 12-48V, polarity reversal protection
Power Interface	Industrial terminal block
Power Consumption	8W

Ambient Temperature and Humidity			
Working Temperature	-20~ 70℃	Storage Temperature	-40 ~ 85℃
Ambient Humidity	5 ~ 95% (non-condensing)		

Indicator	
LED	4G/5G,SignalStrength(L1,L2,L3),SIM1,SIM2,User1,User2, PWR,STATUS,WARN,ERR,

EMC Index	
Electrostatic Discharge	EN61000-4-2, level 3
Radiation RFI Immunity	EN61000-4-3, level 3
Electrical Fast Transients	EN61000-4-4, level 3
Surge	EN61000-4-5, level 3
Conducted RFI	EN61000-4-6 ,level 3
Ring Wave Immunity	EN61000-4-12,level 3
Power Frequency Magnetic Field Resistance	EN61000-4-8, horizontal / vertical 400A/m (>level 2)

Physical Features			
Shock	IEC60068-2-27	Vibration	IEC60068-2-6
Free Fall	IEC60068-2-32		

Certification	
CE, FCC, PTCRB, Verizon Wireless, AT&T	

Software Specifications	
Item	EC942
Operation System	
Operation System	Debian 10, Bootloader, Linux Kernel, Hardware Drivers
File System	Debian Core root filesystem
Package Manager	Debian Package Manager
Network Interconnection	
Network Type	LTE Cat4, LTE Cat6, 5G SA/NSA, (Different models for different networks)
Network Access	APN, VPDN
Access Authentication	CHAP/PAP/MS-CHAP/MS-CHAPV2
LAN Protocol	ARP, Ethernet
WAN Protocol	Static IP, DHCP
Security	
Secure Boot	Support
Reliability	
Backup	Dual SIM
Link Detection	Multi-Level link detection, auto-redials once disconnected
Embedded Watchdog	Device self-diagnosing, auto-recovers from operation faults
Industrial Protocol	
Protocol	
Maintenance and Management	
Upgrade Method	Supports patent upgrade mechanism, local or remote firmware upgrade
Log	Local system logs, remote logs, serial port log output, power-down saving of important logs
Remote Management	InHand DeviceLive, HTTP, HTTPS, Telnet, SSH,etc.

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Ordering Guide

Model	Cellular Type &Frequency Band: <WMNN>	Memory	FLASH	Ethernet Port	Serial Port	WiFi/GPS/ CAN/TPM	I/O
EC942-B-LQA8-B	China LTE CAT4 LTE-FDD: B1/B3/B5/B8 LTE-TDD:B34/B38/B39/B40/B41 WCDMA: B1/B8 TD-SCDMA: B34/B39 CDMA: BC0 GSM: 900/1800MHz	4 GB	16 GB	2*1000Mbps	2*RS232/RS485/ RS422 configurable	NO	NO
EC942-H-LQA8-B	China LTE CAT4 LTE-FDD: B1/B3/B5/B8 LTE-TDD:B34/B38/B39/B40/B41 WCDMA: B1/B8 TD-SCDMA: B34/B39 CDMA: BC0 GSM: 900/1800MHz	4 GB	16 GB	2*1000Mbps	2*RS232/RS485/ RS422 configurable	YES	YES
EC942-B-NRQ3-B	Global (excluding China) 5G NR 5G NR NSA : n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48/n66/n71/n77/n78/n79 5G NR SA : n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48/n66/n71/n77/n78/n79 LTE FDD: B1/B2/B3/B5/B7/B8/B12(B17)/B13/B14/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE TDD: B34/B38/B39/B40/B41/B42/B48 LAA:B46 WCDMA Bands: B1/B2/B3/B4/B5/B6/B8/B19	4 GB	16 GB	2*1000Mbps	2*RS232/RS485/ RS422 configurable	NO	NO
EC942-H-NRQ3-B	Global (excluding China) 5G NR 5G NR NSA : n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48/n66/n71/n77/n78/n79 5G NR SA : n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48/n66/n71/n77/n78/n79 LTE FDD: B1/B2/B3/B5/B7/B8/B12(B17)/B13/B14/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE TDD: B34/B38/B39/B40/B41/B42/B48 LAA:B46 WCDMA Bands: B1/B2/B3/B4/B5/B6/B8/B19	4 GB	16 GB	2*1000Mbps	2*RS232/RS485/ RS422 configurable	YES	YES
EC942-B-FQ58-B	EMEA LTE CAT4 LTE-FDD:Band1/3/7/8/20/28A LTE-TDD:Band38/40/41 WCDMA:Band1/8 GSM:Band3/8	4 GB	16 GB	2*1000Mbps	2*RS232/RS485/ RS422 configurable	NO	NO
EC942-H-FQ58-B	EMEA LTE CAT4 LTE-FDD:Band1/3/7/8/20/28A LTE-TDD:Band38/40/41 WCDMA:Band1/8 GSM:Band3/8	4 GB	16 GB	2*1000Mbps	2*RS232/RS485/ RS422 configurable	YES	YES
EC942-B-FQ38-B	North America LTE CAT4 LTE-FDD:Band2/4/5/12/13/14/66/71 WCDMA:Band 2/4/5	4 GB	16 GB	2*1000Mbps	2*RS232/RS485/ RS422 configurable	NO	NO
EC942-H-FQ38-B	North America LTE CAT4 LTE-FDD:Band2/4/5/12/13/14/66/71 WCDMA:Band 2/4/5	4 GB	16 GB	2*1000Mbps	2*RS232/RS485/ RS422 configurable	YES	YES
EC942-B-EN00-B	Global No Cellular	4 GB	16 GB	2*1000Mbps	2*RS232/RS485/ RS422 configurable	NO	NO
EC942-H-EN00-B	Global No Cellular	4 GB	16 GB	2*1000Mbps	2*RS232/RS485/ RS422 configurable	YES	YES

About Us

InHand Networks is a leading IoT solutions provider founded in 2001, dedicated to driving digital transformation across industries and empowering customers to unlock their full potential and achieve accelerated growth.

We specialize in delivering industrial-grade connectivity solutions for diverse sectors, such as enterprise networks, industrial and building IoT, digital energy, smart commerce, and mobility. Our comprehensive product portfolio and services cater to various applications worldwide, including smart manufacturing, smart grid, intelligent transportation, smart retail, etc. With a global footprint spanning over 60 countries, we serve customers in China, the United States, France, Germany, the United Kingdom, Italy, and beyond.

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