InHand Networks

Free Webinar

Thrive with IoT-enabled Smart EV Charging Solutions

InHand Networks

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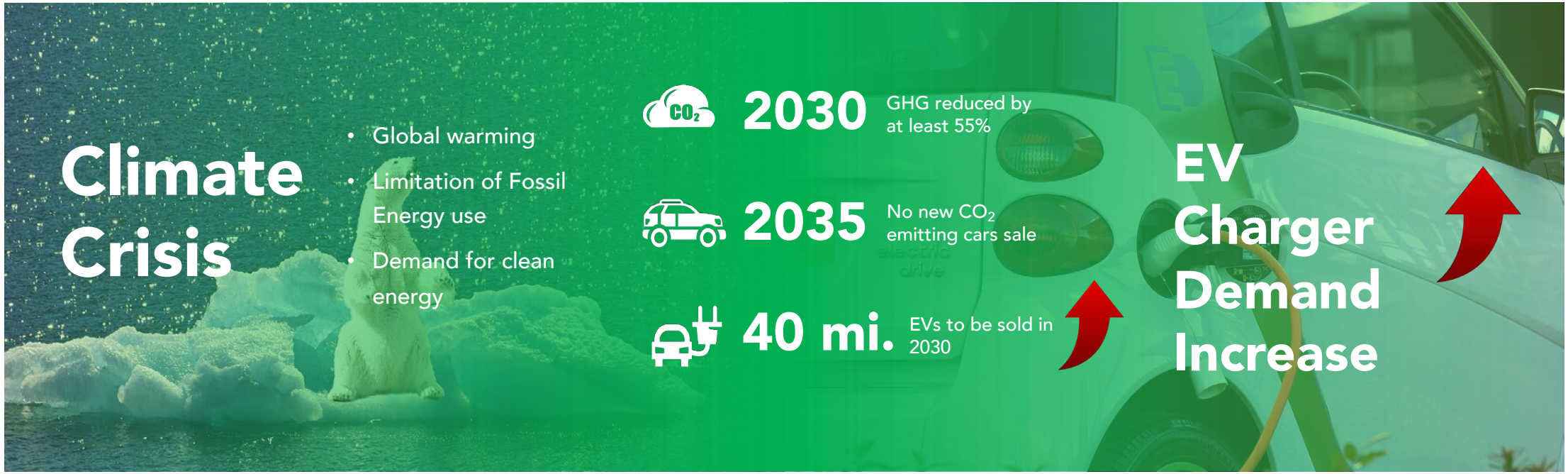
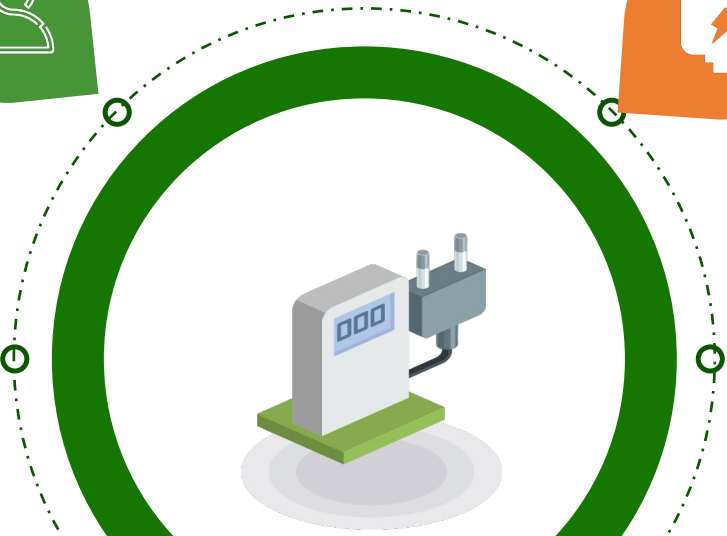
EV Charging Market Growth



Challenges in EV Charging Management



Poor Customer Experience

Inefficient Energy Management

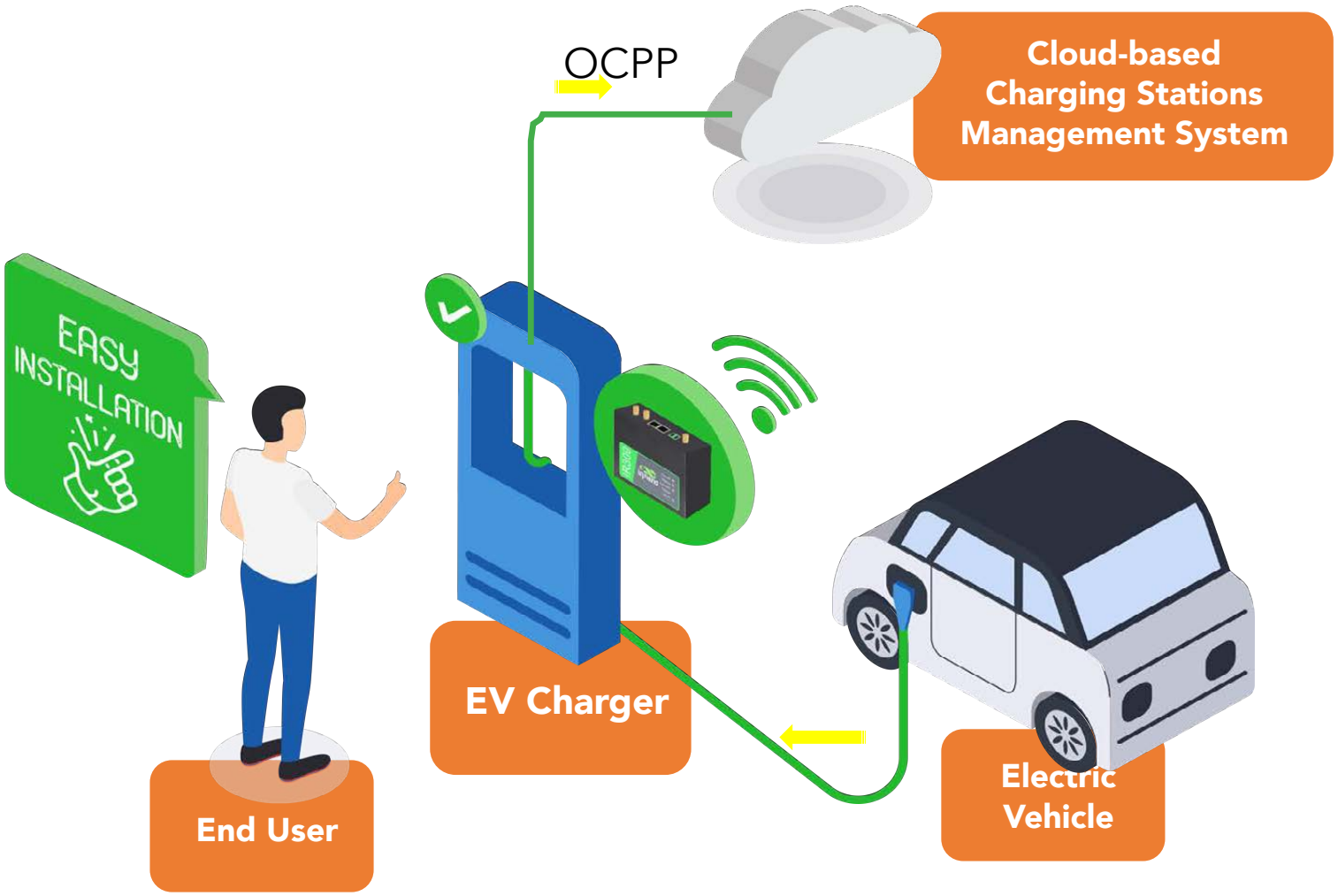
Inconvenient Payment Methods

Burden on the Grid

Poor Management Efficiency

High Maintenance Costs

Smart EV Charging Solution



Smart EV charging

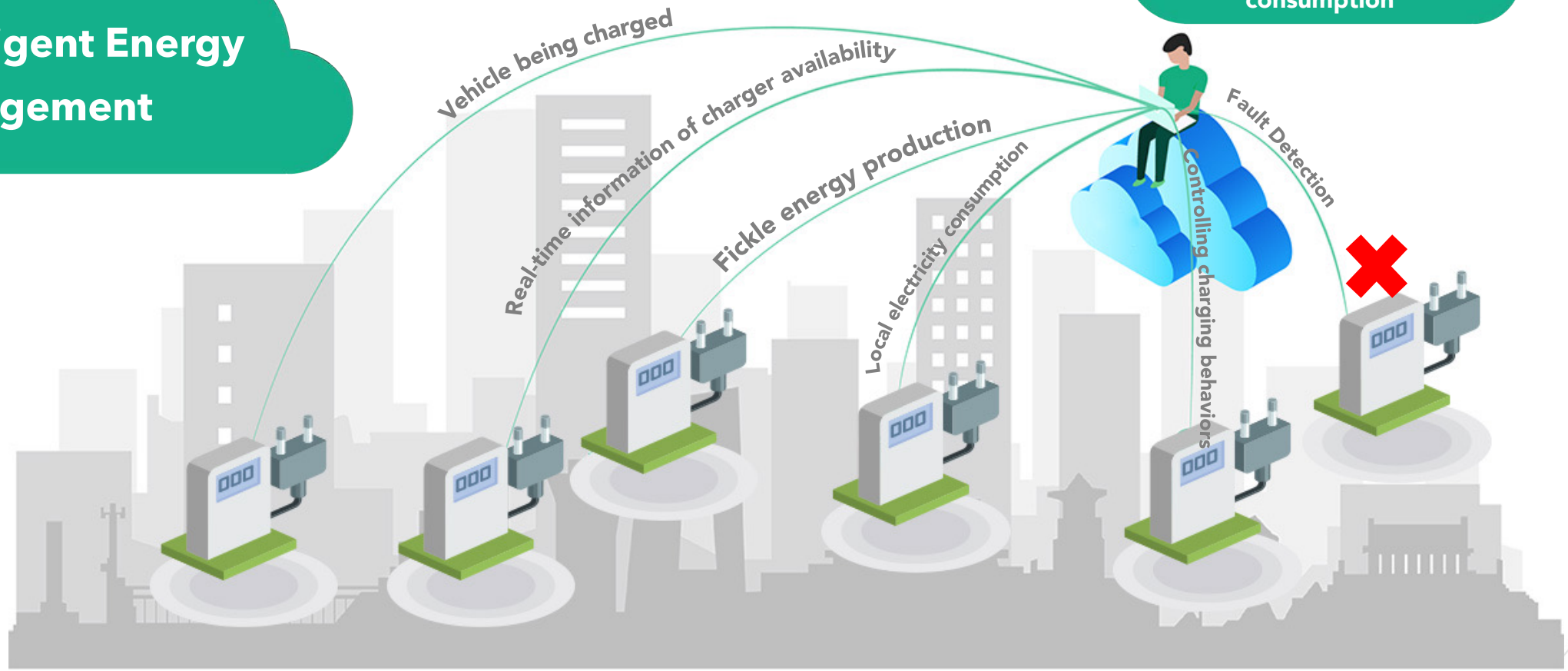
is a system where an electric vehicle and a charging device share a **data connection**, and the charging device shares a data connection with a charging operator.

Smart EV Charging Solutions

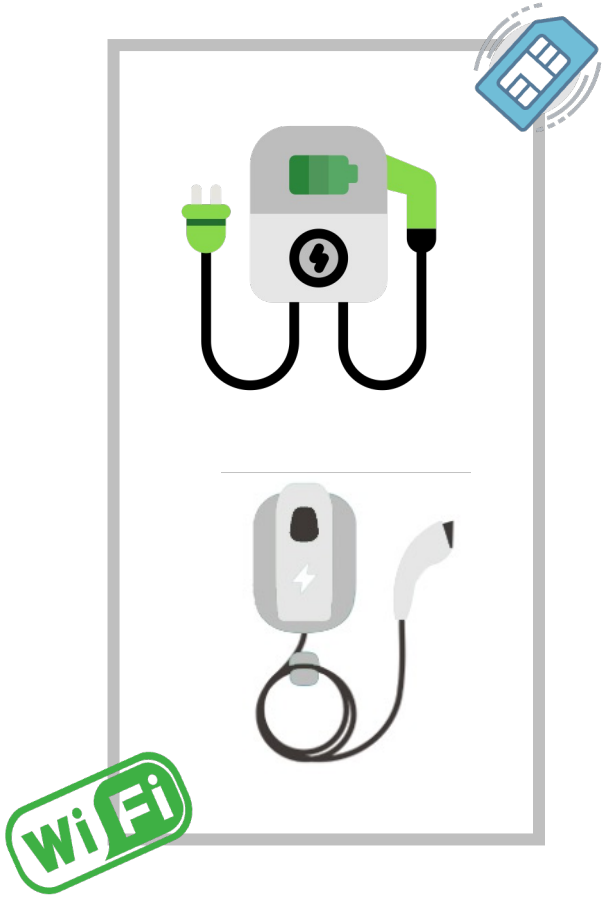
Fickle energy production

Intelligent Energy Management

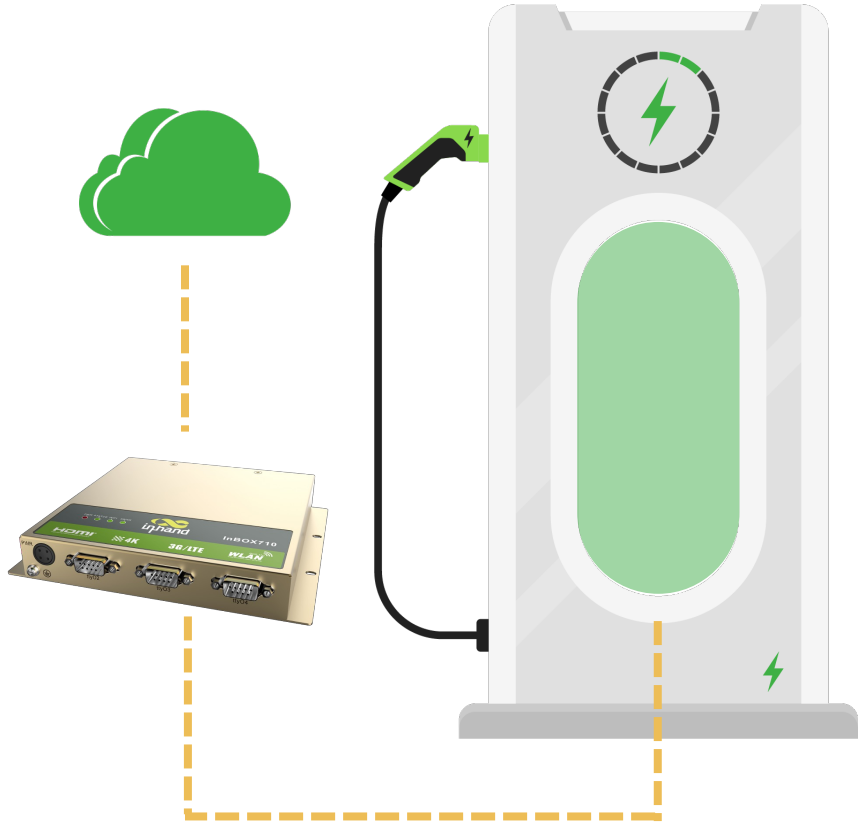
Smart EV charging lets people monitor, manage, and adjust energy consumption



Smart EV Charging with IoT Solutions



AC EV Charger

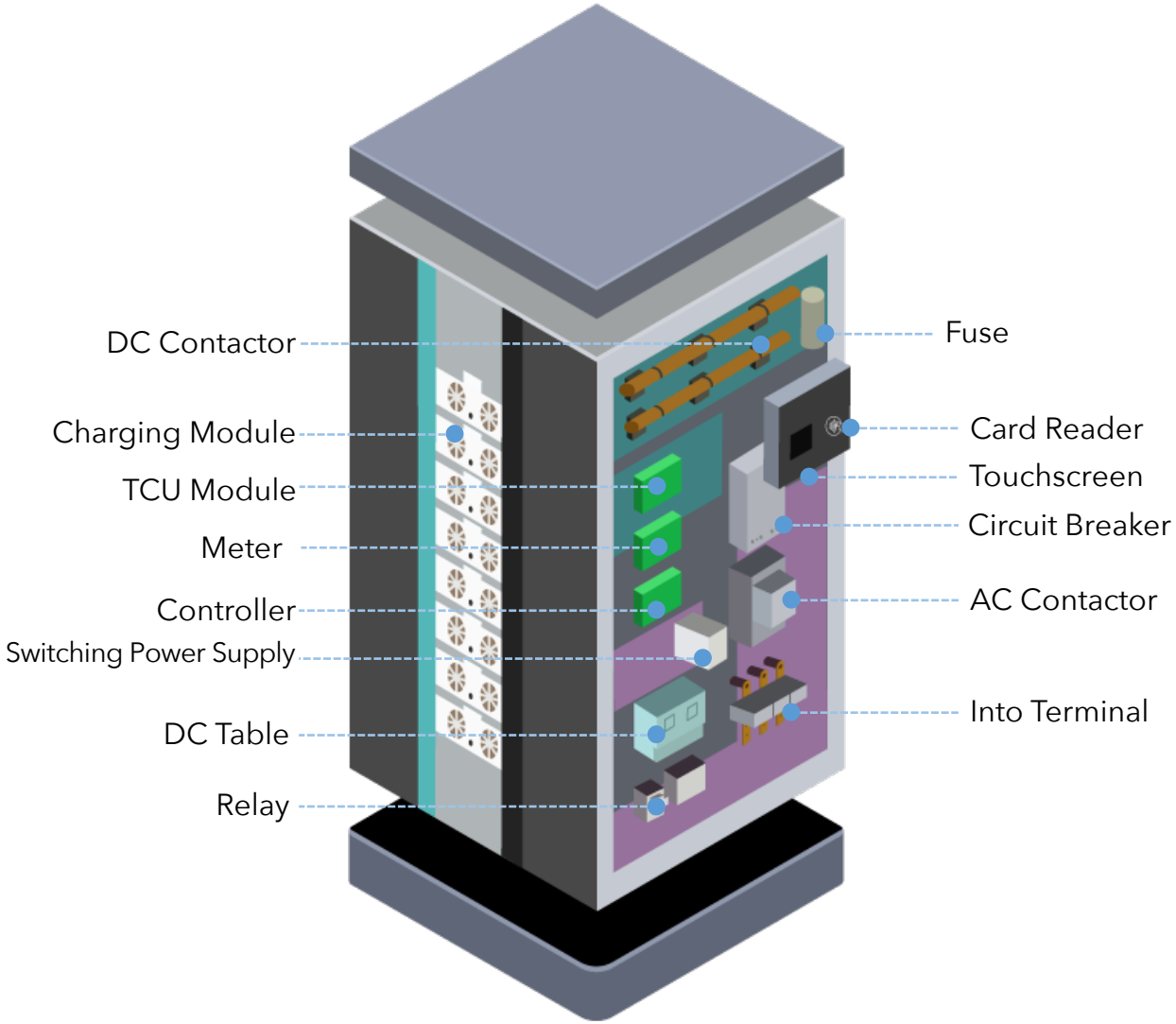


DC EV Charger

DC EV Chargers have higher requirements for data transmission & handling

- Real-time Data Transmission
- Reliable & Secure Networking
- Managable from the Cloud
- Large quantity data handling - Edge computing
- .....

Smart EV Charging with IoT Solutions



Abundant Terminals Connection

- PLC
- Sensors
- Card reader
- Cameras
- Touch-screen
- Controller
- Speaker
- ...

Smart EV Charging Benefits

EV User

- EV Chargers Availability
- EV Charging Status
- Real-time Pricing Information
- Online Payment
- Charge Faster

- Monitor EV Charger Status
- Centralized Control and Management of Charging
- Real-time Charging information
- ....

Charging Operator

- Save Energy
- Efficient Energy Management
- Better service for the user
- ....

Grid Operator

IoT-Powered Smart EV Charging

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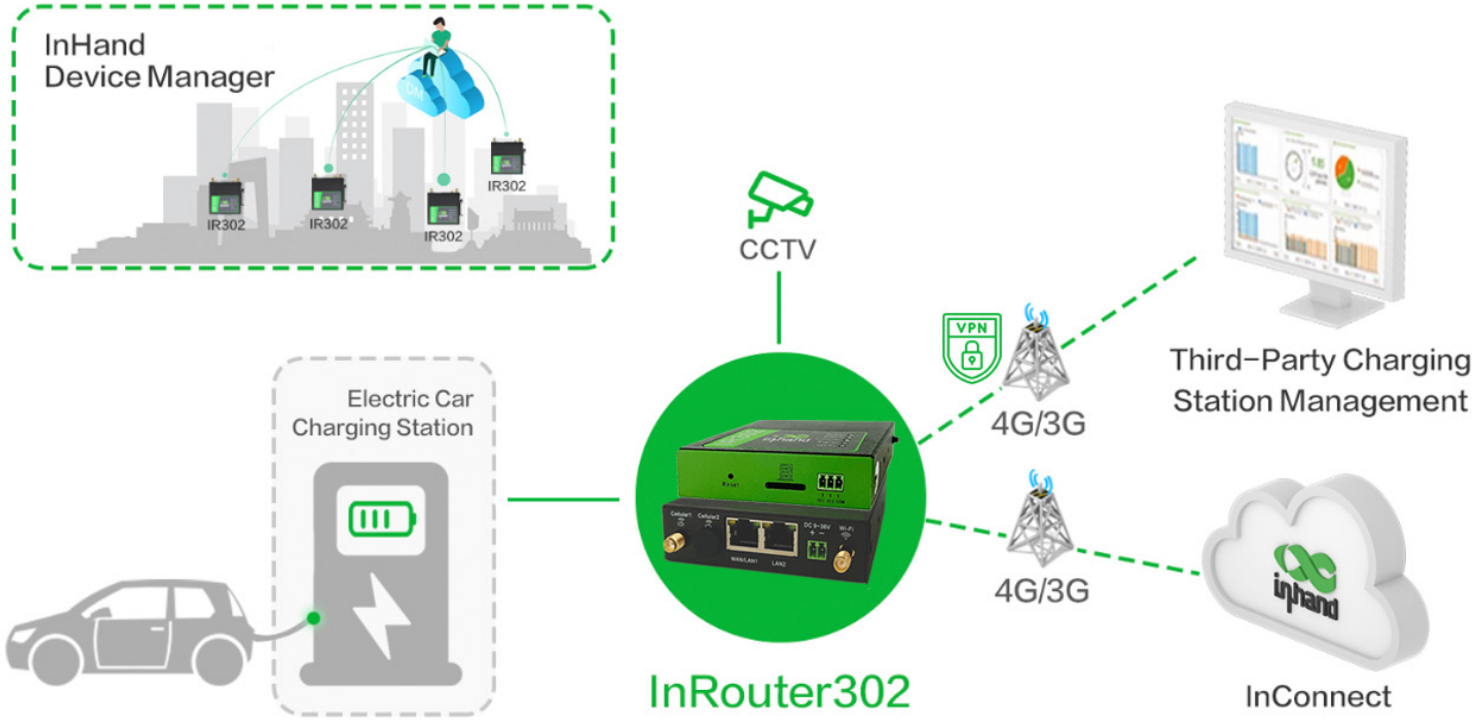
Connectivity

- Uninterrupted and reliable connectivity between the EV charging station and the remote management system
- Comprehensive security mechanisms to protect transaction security
- Easy deployment without much IT expertise
- Real-time monitoring of charger status and remote maintenance

Secure & Reliable Connectivity of EV Charging Stations



- "Always online" connectivity
- Security escort of your network
- Easy to install
- Centralized and free cloud management

Featured Product – IR300
Industrial LTE Router

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4G LTE CAT4/CAT1/CAT M1	2.4G 2.4G Wi-Fi	Up to 5*10/100 Mbps ETH Port
Reliability: Multiple link backups, Dual SIM, VRRP	Interfaces: RS232, RS485, IO	Security: IPsec VPN, PPTP, OPEN VPN
Compact, easy for installation	Industrial design, -20°C ~ +70°C	DM Centralized Management

CE FC PTCRB Industry Canada CB E RoHS

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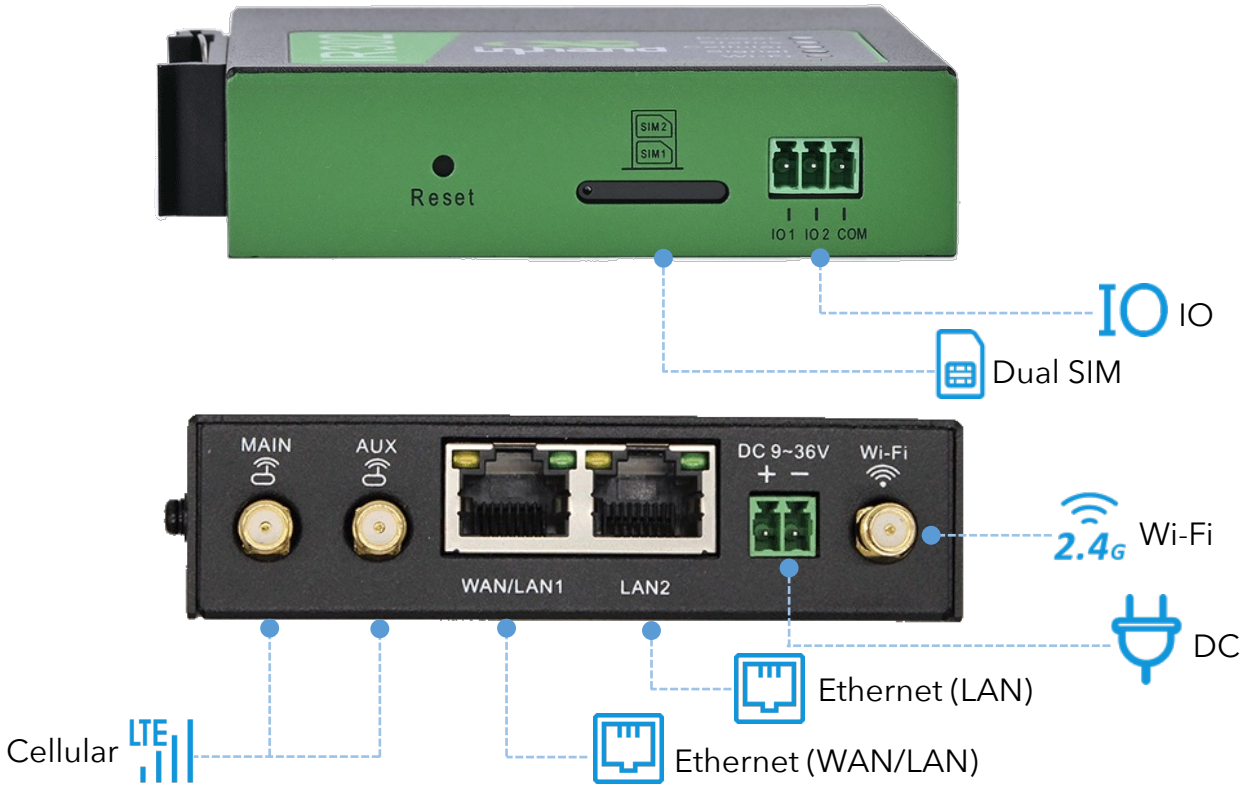
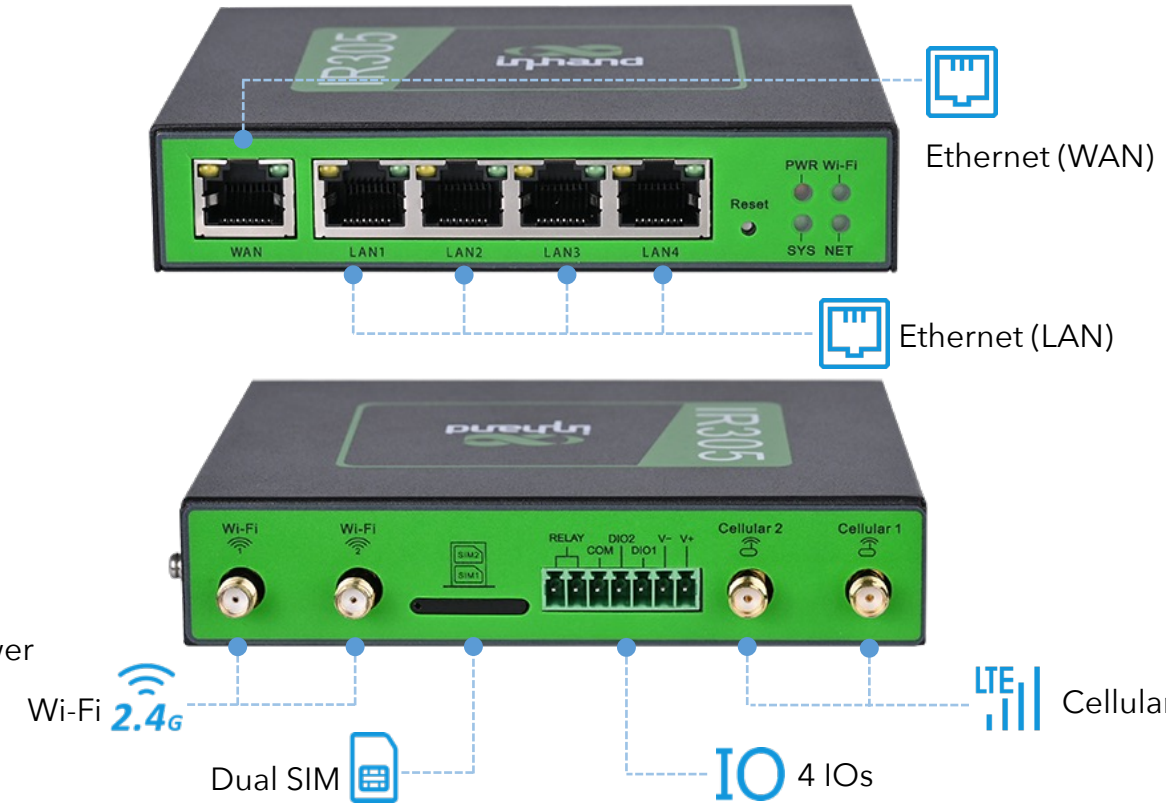
Featured Product – IR300 Industrial LTE Router



IR302



IR305

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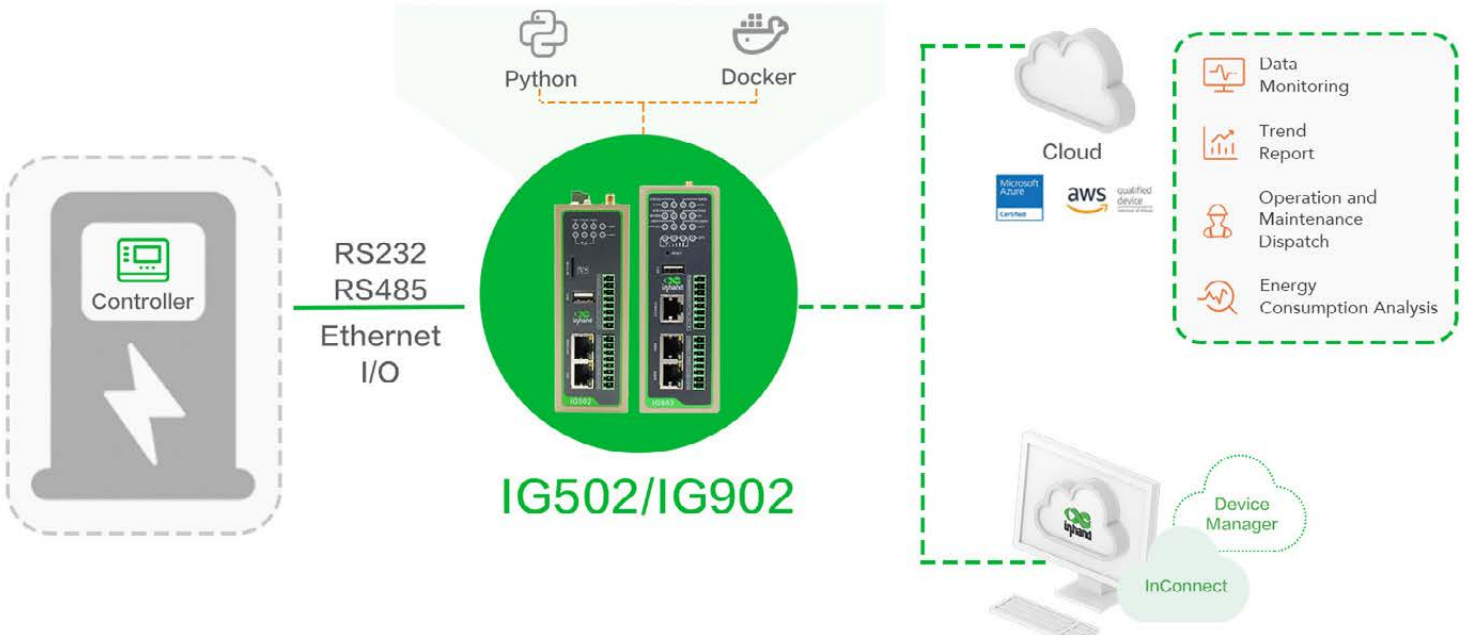
Energy Management

- Real-time acquisition of energy data, powerful edge computing for data pre-processing
- Easy integration to the cloud for data analytics
- Intelligent control of EV chargers and adjustment of power supply/consumption

Data Driven Energy Management



- Uninterrupted and Reliable Communications
- Easy Configuration for Data Acquisition
- Powerful Edge Computing Capabilities
- Extensive Interfaces

Featured Product – IG IoT Edge Gateway

LTE CAT4/CAT1	Multiple Industrial Protocols	AWS, Azure
Interfaces: RS232, RS485, I/O, ETH, Wi-Fi	Powerful Edge Computing	Python/Docker
Industrial design, -25°C ~ +70°C	Device Manager, InConnect	Dual SIM

CE FC PTCRB Industry Canada UK CA RoHS COMPLIANT

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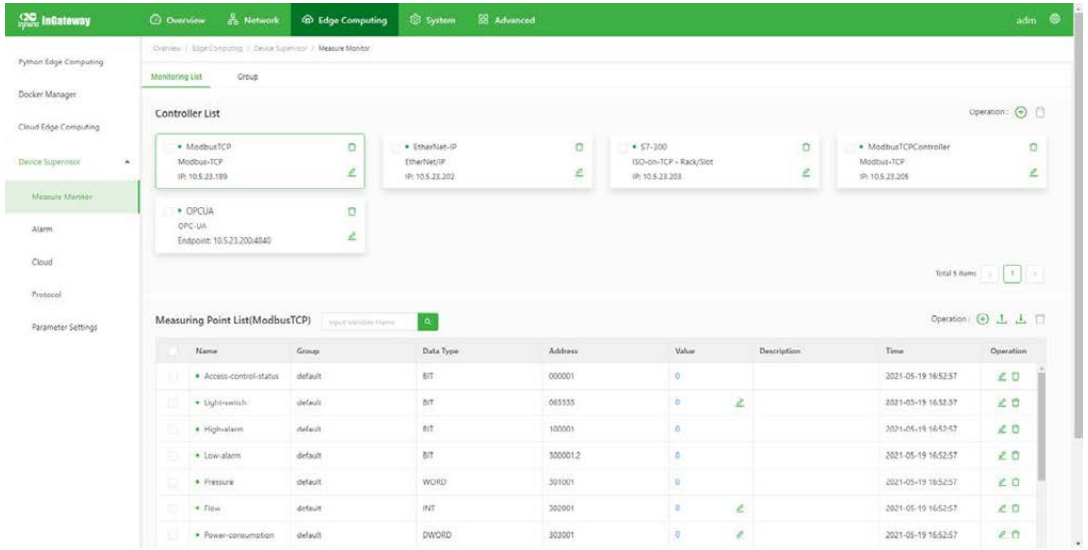
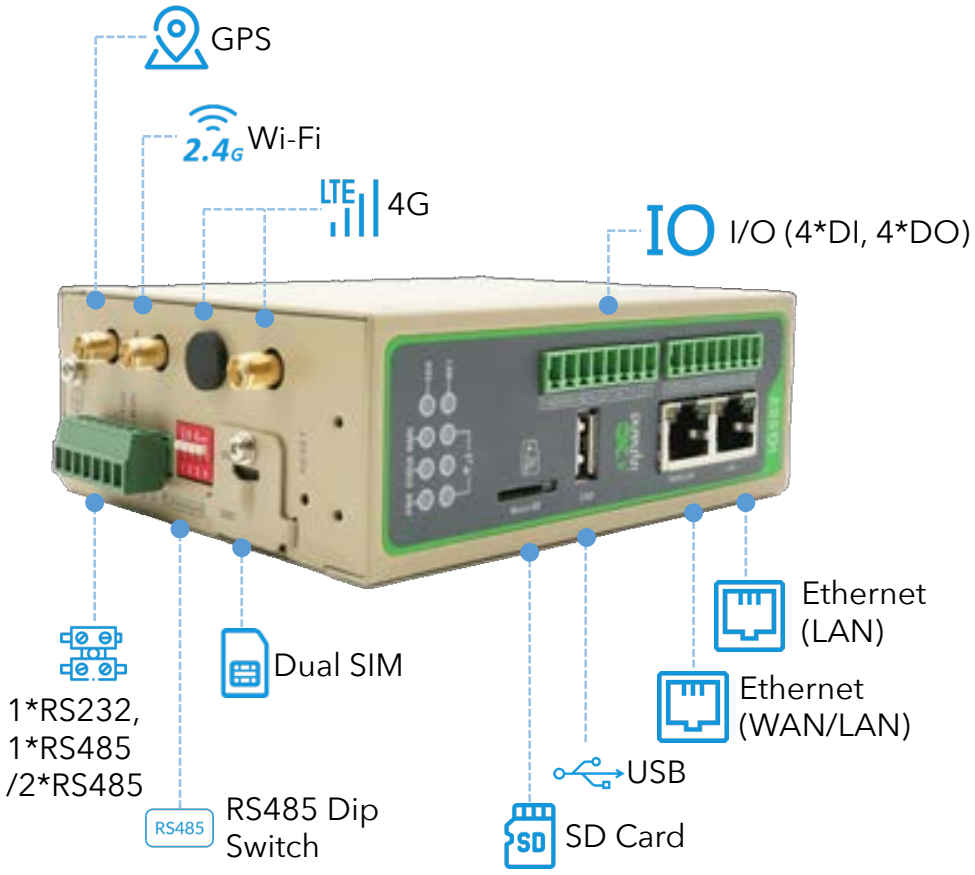
InGateway: 3-step Configuration

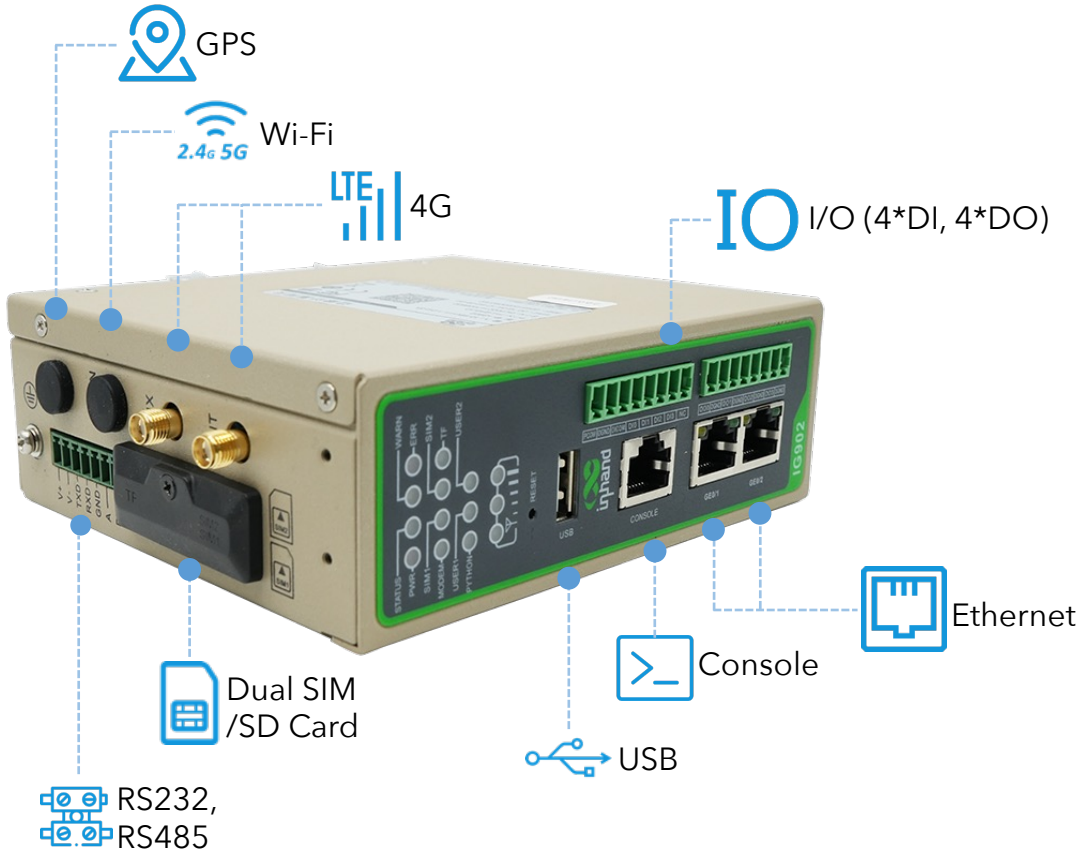


1. Add your devices and choose protocols;
2. Configure variables and alarms;
3. Connect to a 3rd party cloud (AWS, Azure, ThingsBoard, etc.)

Featured Products – IG502/IG902 IoT Edge Gateway



IG502



IG902

Versatile Smart EV Charging Kiosk

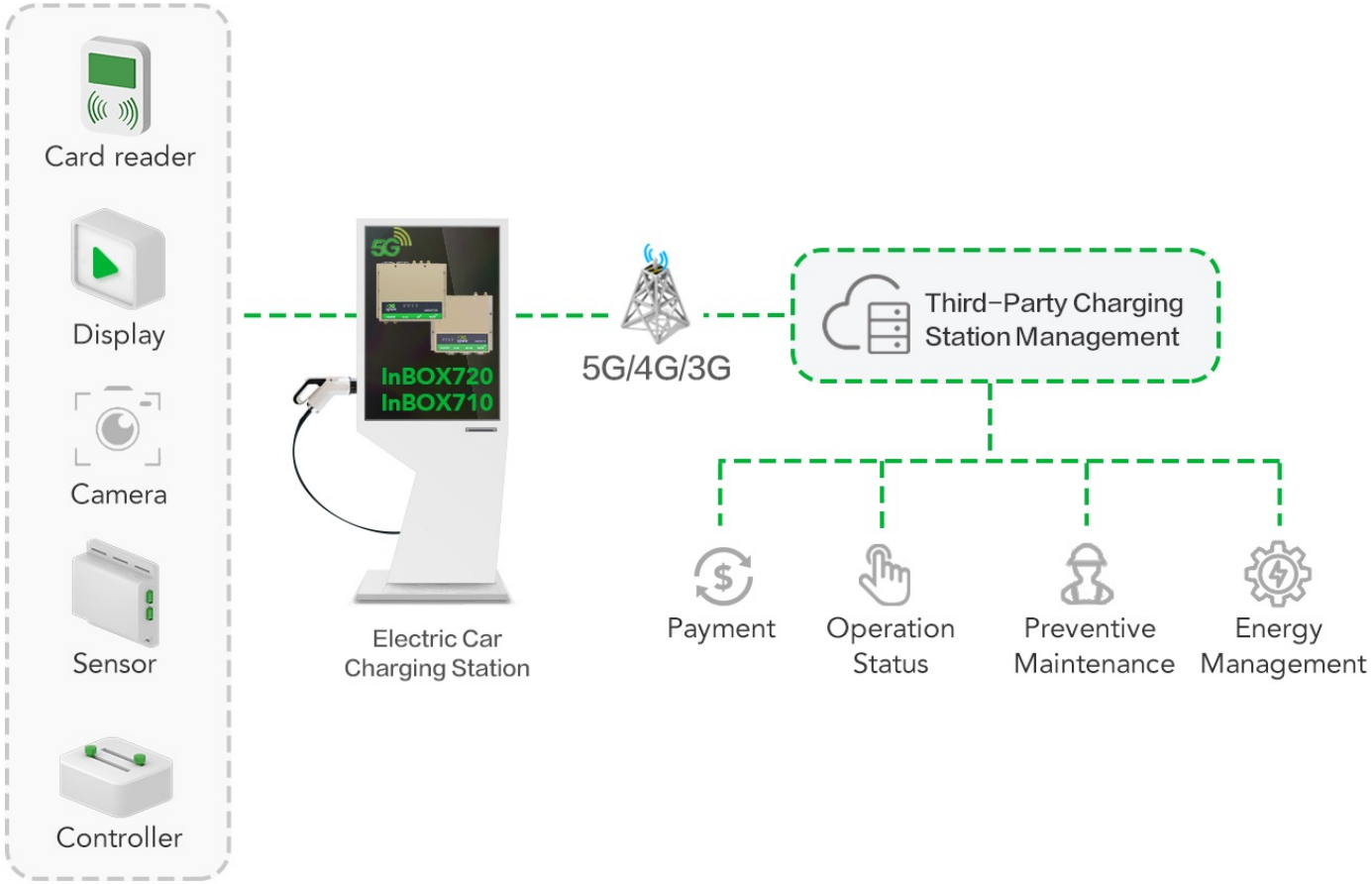
5G Connectivity

Multiple Payments

Interactive UI

Custom Applications

Versatile Smart EV Charging Kiosk



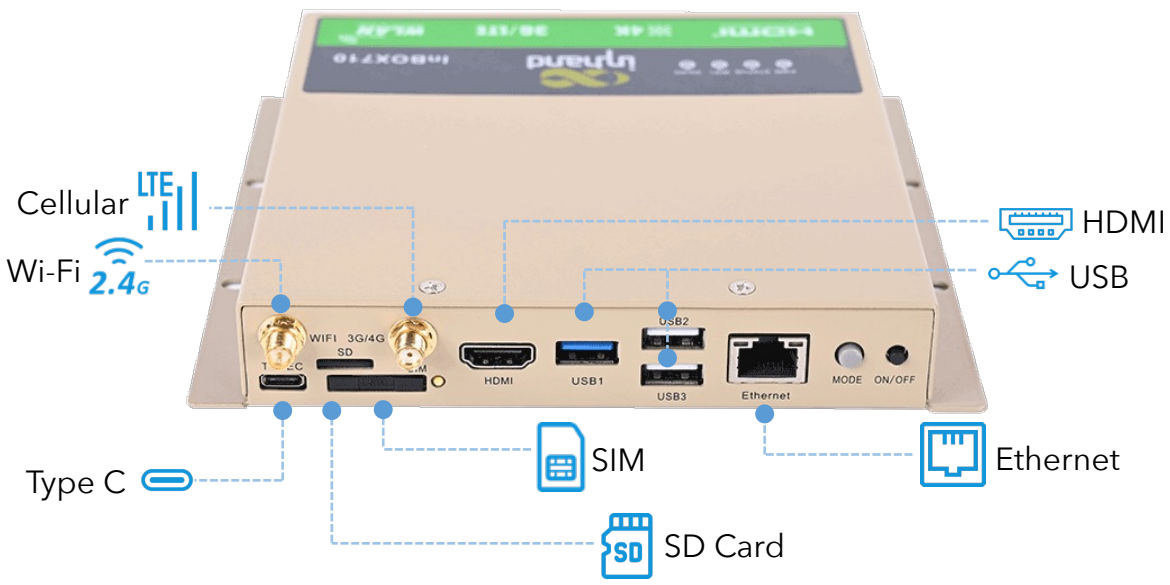
- Ultra Fast 5G Connectivity
- Rich Interfaces for Peripherals
- Industrial Design
- Powerful Computing Capabilities + Open System

Featured Product – InBOX700
5G/4G Industrial Computer

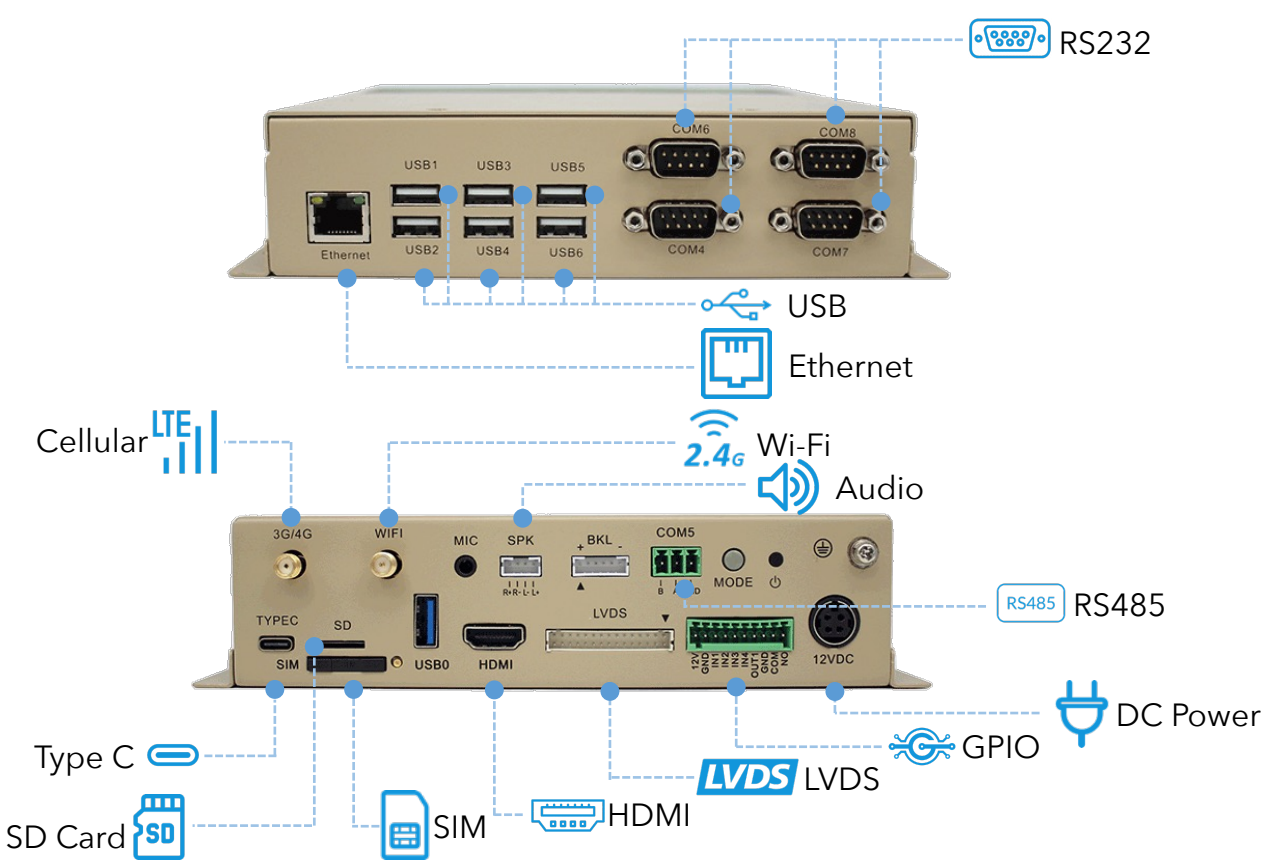
CE

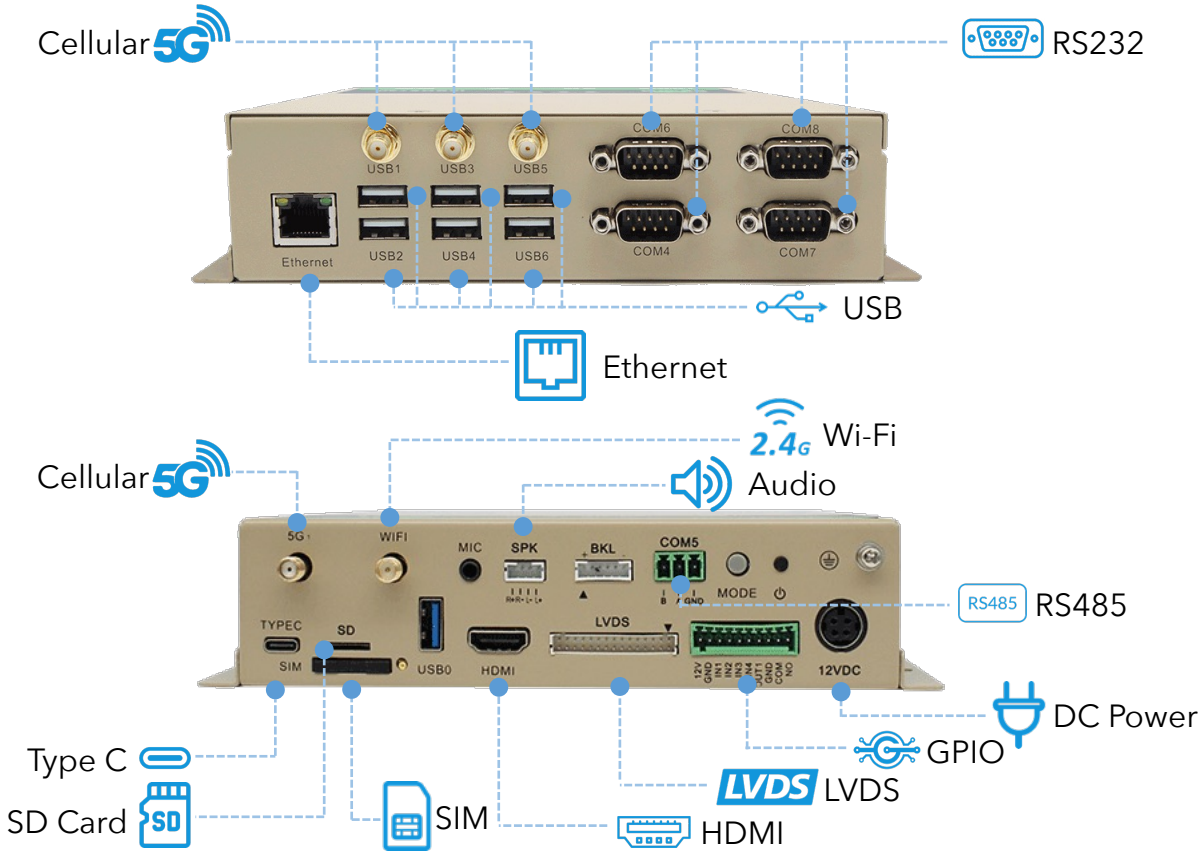
ARM hexa-core processor	5G/4G, Ethernet, Wi-Fi, Bluetooth	Dual HDMI, supports up to 4K
Multiple Interfaces: RS-232/485, Type C	Up to 6*USB2.0, 1*USB3.0	Android/ Linux
Custom UI	Edge Computing	IP40, -20~70°C, EMC up to Level 4

Featured Product – InBOX710 4G Industrial Computer



Featured Product – InBOX720 5G Industrial Computer





Selection Guide

Specifications	IR302	IR305	IG502	IG902	InBOX710	InBOX720
Memory	128MB DDR2, 32MB Flash	128MB DDR2, 32MB Flash	512MB RAM, 8GB eMMC FLASH	512MB/1GB RAM, 8GB eMMC FALSH	2GB DDR3,16GB eMMC	2GB DDR3,16GB eMMC
Cellular	LTE CAT4	LTE CAT4	LTE CAT4, LTE CAT1	LTE CAT4	LTE CAT4	5G/LTE CAT4
SIM	2	2	2	2	1	1
Wi-Fi	2.4GHz (IEEE 802.11b/g/n)	2.4GHz (IEEE 802.11b/g/n)	2.4GHz (IEEE 802.11b/g/n)	2.4GHz /5GHz (IEEE 802.11ac/b/g/n)	2.4G (802.11 b/g/n)	Wi-Fi 2.4G (802.11 b/g/n)
Ethernet Ports	2*10/100Mbps Ethernet port	5*10/100Mbps Ethernet port	2*10/100Mbps Ethernet port	2*10/100/1000Mbps Ethernet port	1*10/100Mbps	1*10/100Mbps
VLAN	/	√			/	/
USB	/	/	USB 2.0*1	USB 2.0*1	USB2.0*2, USB3.0*1	USB2.0*6, USB3.0*1
Serial Ports	1*RS232	1*RS232, 1*RS485	RS232 *1, RS485*1or RS485 *2	RS232 *1, RS485*1	RS232*3 or RS232*2+RS485*1	RS232*4, RS485*1
I/O Ports	2*IO	4*DI or DO	4*DI, 4*DO	4*DI, 4*DO	/	1*10 PIN GPIO
HDMI	/	/	/	/	HDMI 2.0 x 1 or 2	HDMI 2.0 x 1
Management Platform	Device Manager, InConnect	Device Manager, InConnect	Device Manager, InConnect	Device Manager, InConnect		
Protection	IP30	IP30	IP30	IP30	IP40	IP40
Operating Temperature	-20°C ~ +70°C	-20°C ~ +70°C	-20°C ~ +70°C	-25°C ~ +70°C	-25°C ~ 70°C	-20°C ~ 70°C
Dimensions	90 x 90 x 25 mm	120 x 99 x 25mm	127 x 108.2 x 35mm	133 x 114 x 45mm	170 x 150 x 260mm	194 x 150 x 436mm
Compliance	CE, FCC, PTCRB, IC, Verizon, AT&T, E-Mark	CE, FCC, CB, E-Mark, PTCRB, IC, VZW, RCM, AT&T...	CE, FCC, PTCRB, UL, C1D2 (Class 1 Division 2), VZW, AT&T, IC, RCM, NBTC, UKCA, ANATEL	CE, FCC, PTCRB, RoHS, RCM, IC, IMDA, AT&T, MIC&JATE, MSIP	CCC, CE, FCC, IC	CE

Success Stories

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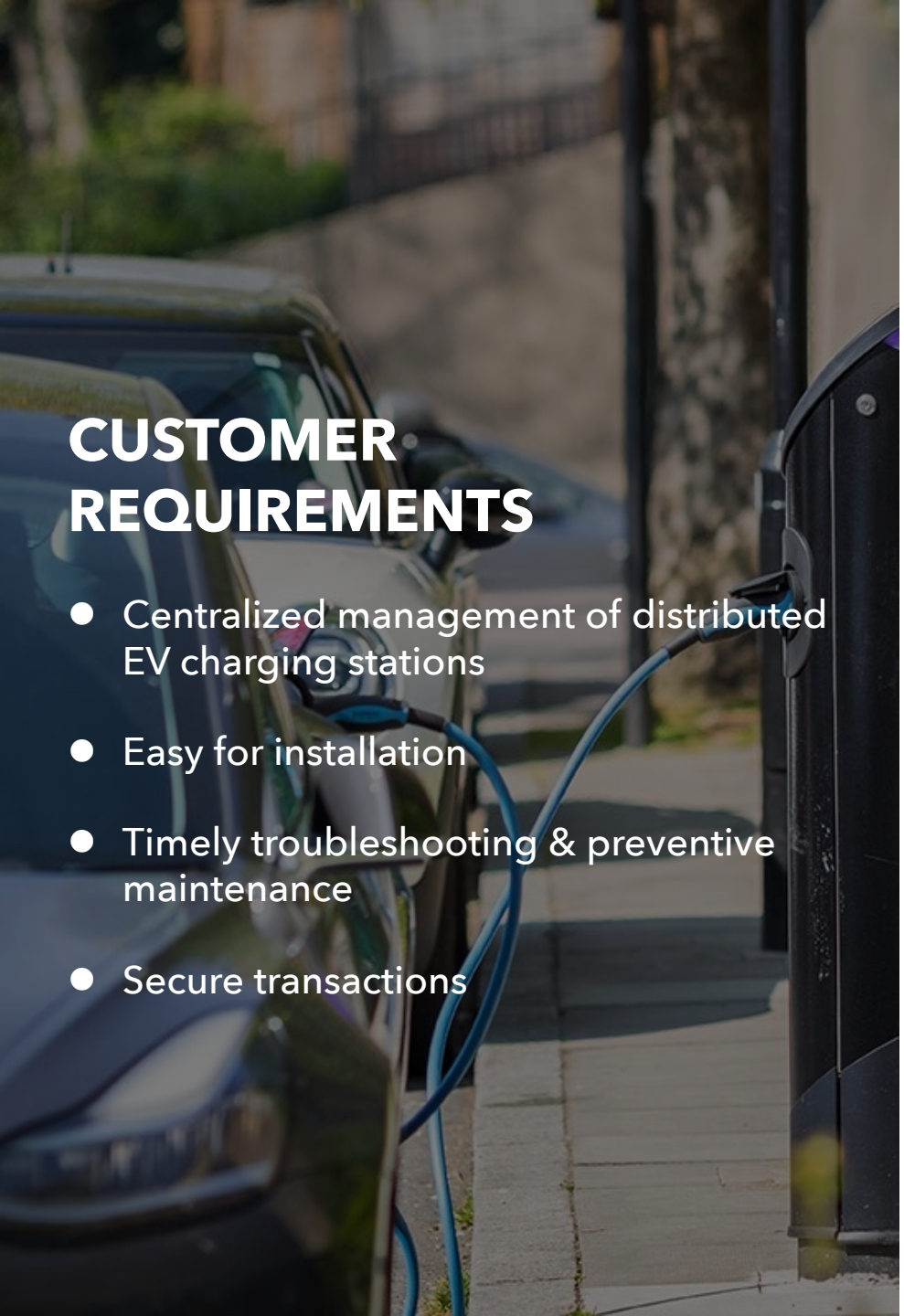
SUCCESS STORY

RELIABLE CONNECTIVITY OF EV CHARGING STATIONS



CUSTOMER REQUIREMENTS

- Centralized management of distributed EV charging stations
- Easy for installation
- Timely troubleshooting & preventive maintenance
- Secure transactions

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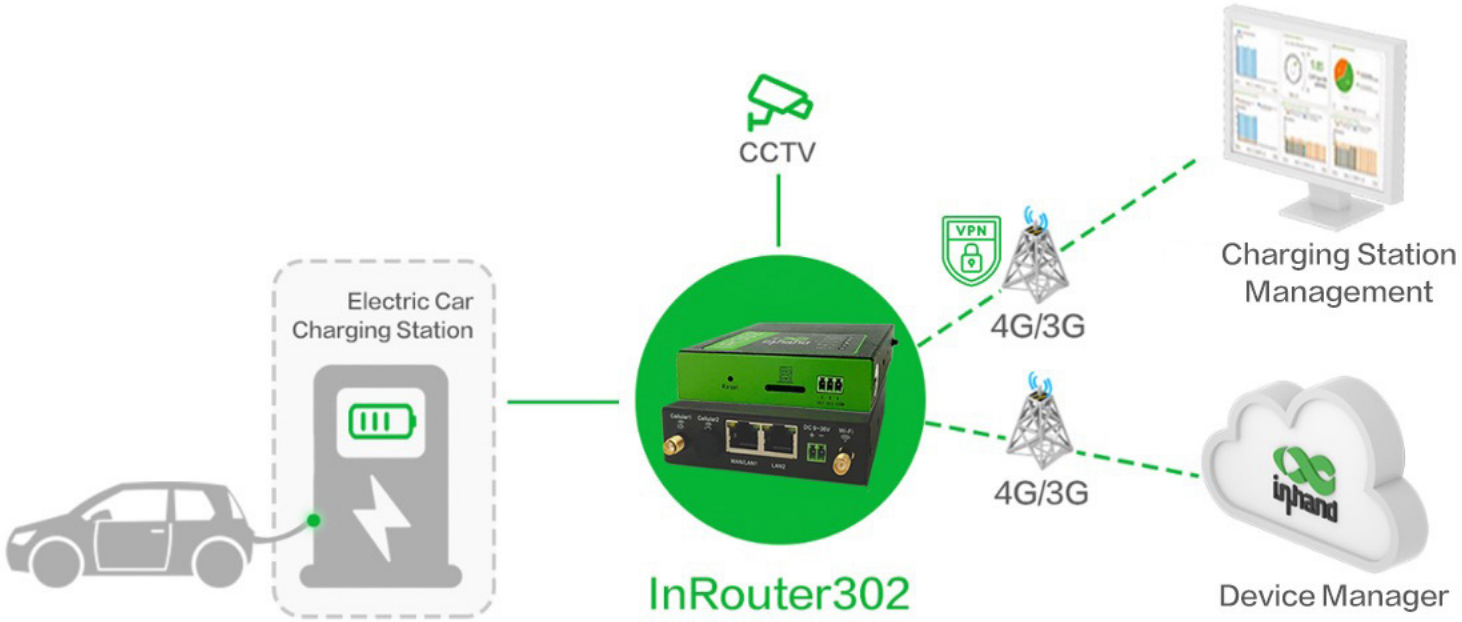

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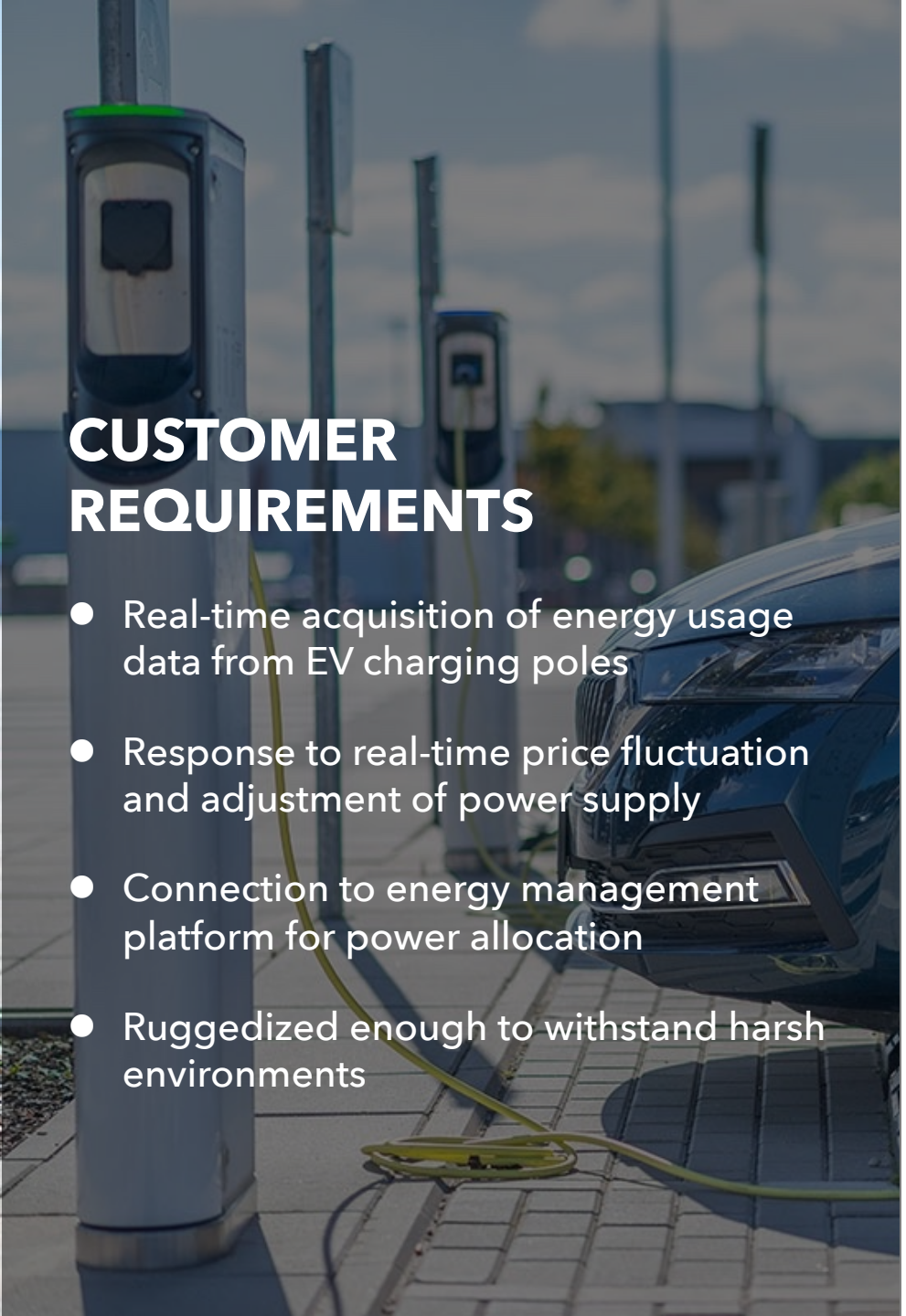
SUCCESS STORY

SMART ENERGY MANAGEMENT

Based on Real-time Electricity Data Acquisition and Big Data Analytics



CUSTOMER REQUIREMENTS

- Real-time acquisition of energy usage data from EV charging poles
- Response to real-time price fluctuation and adjustment of power supply
- Connection to energy management platform for power allocation
- Ruggedized enough to withstand harsh environments

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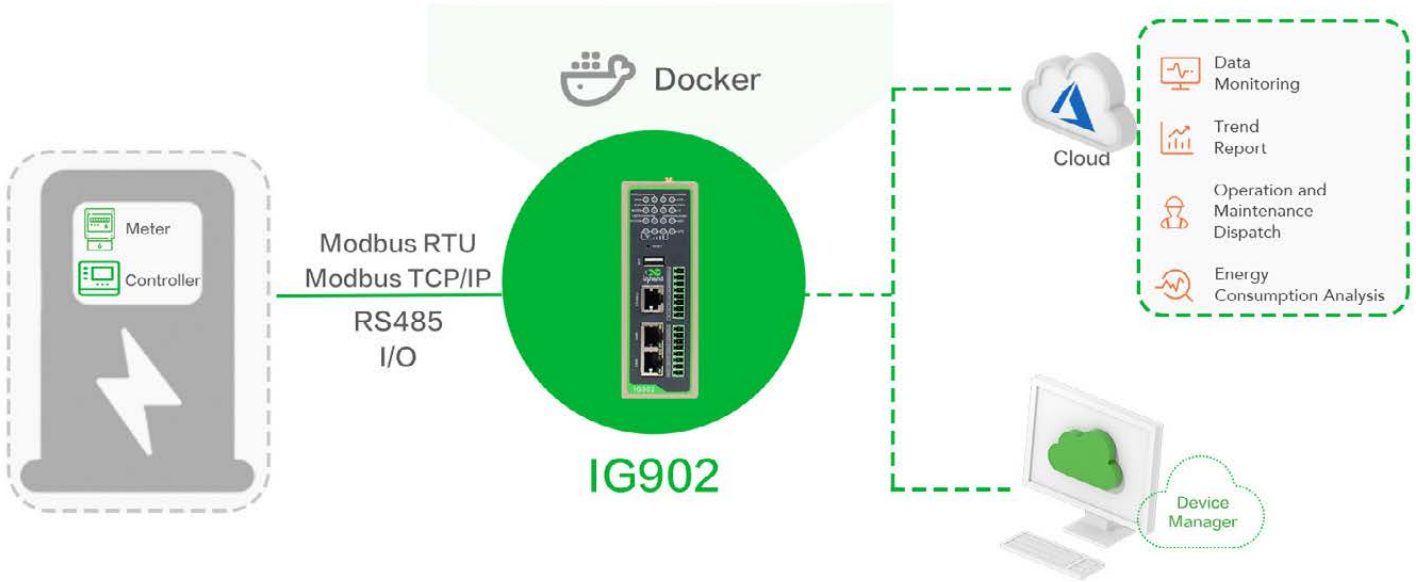

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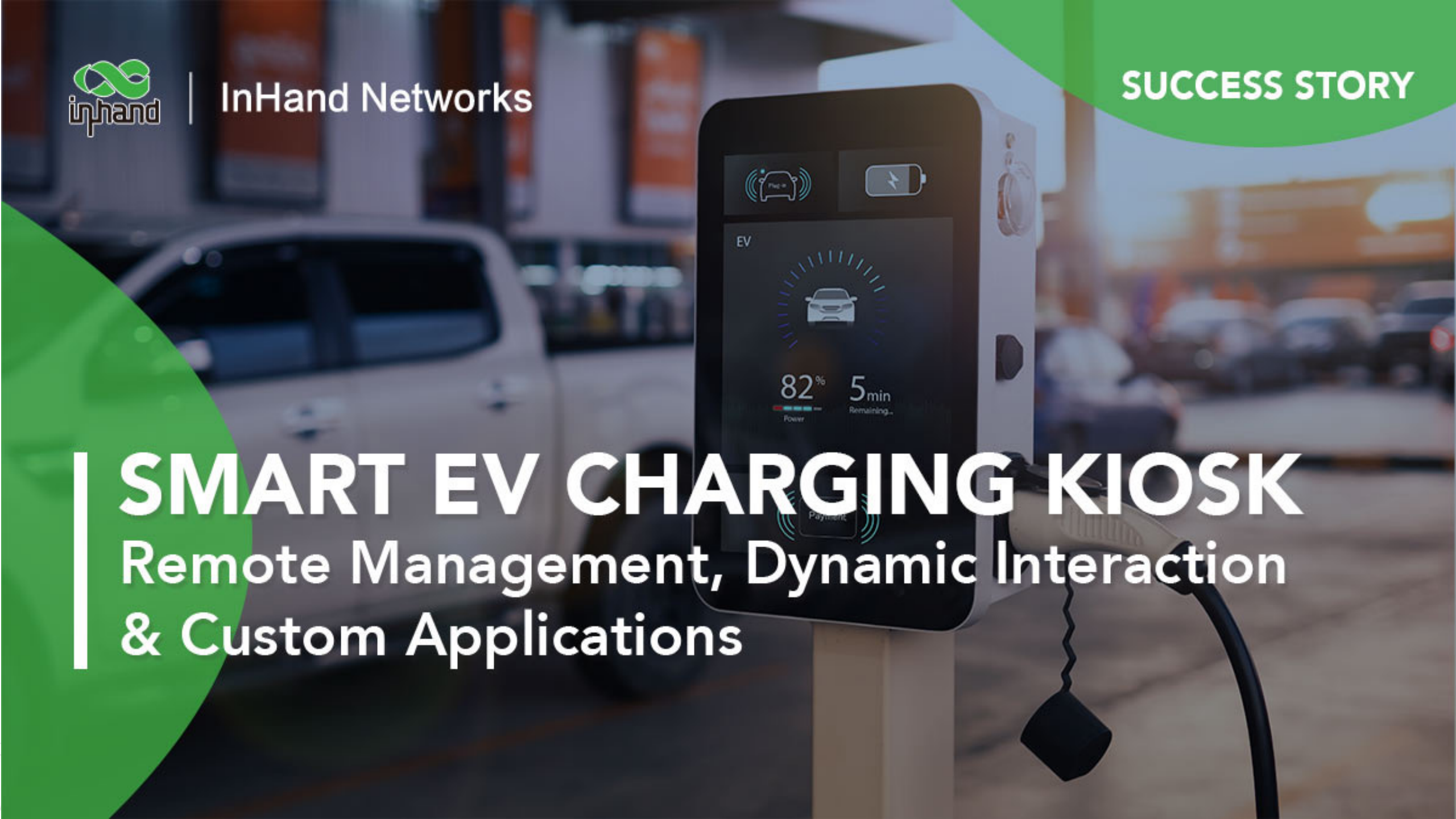
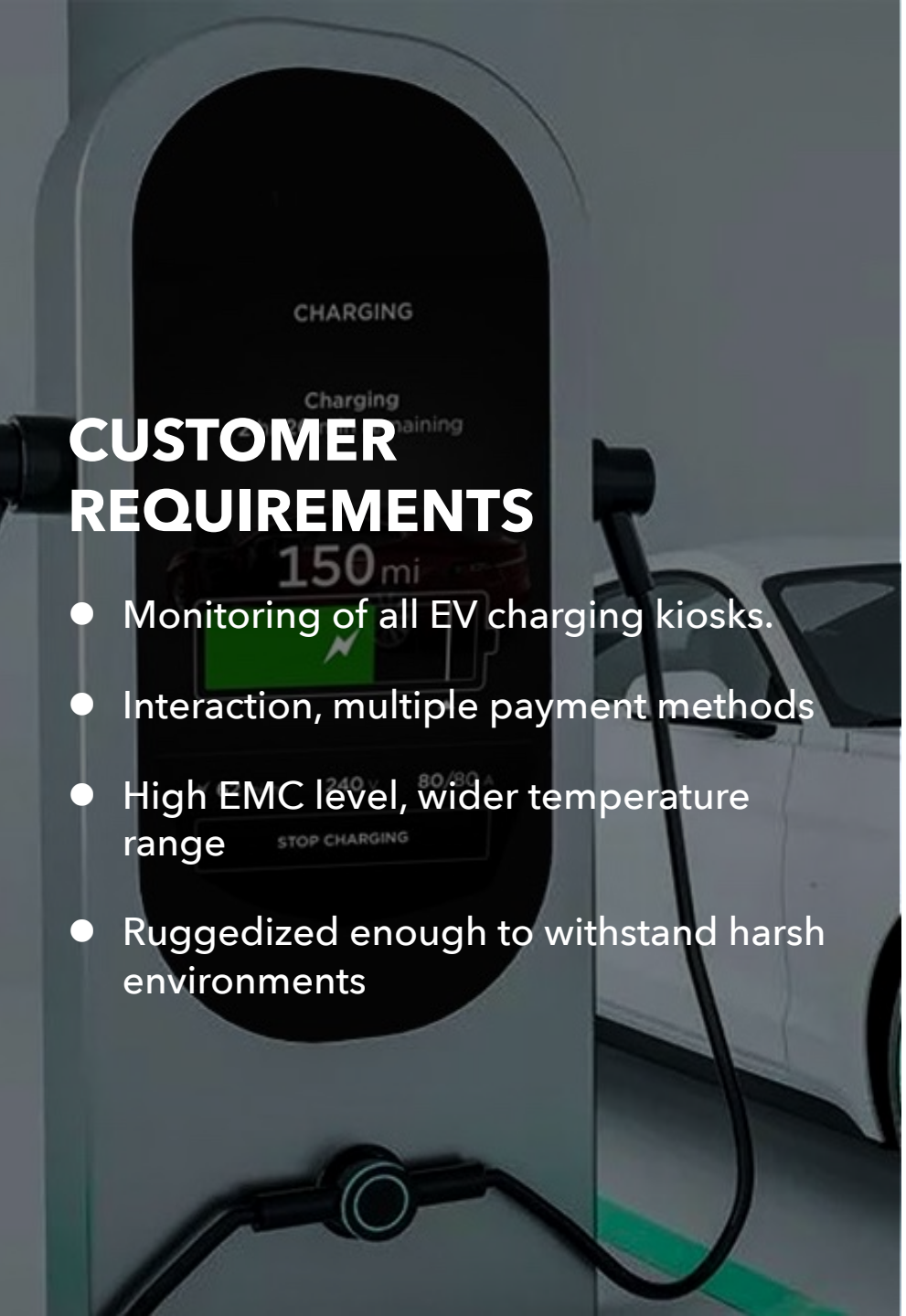
SUCCESS STORY



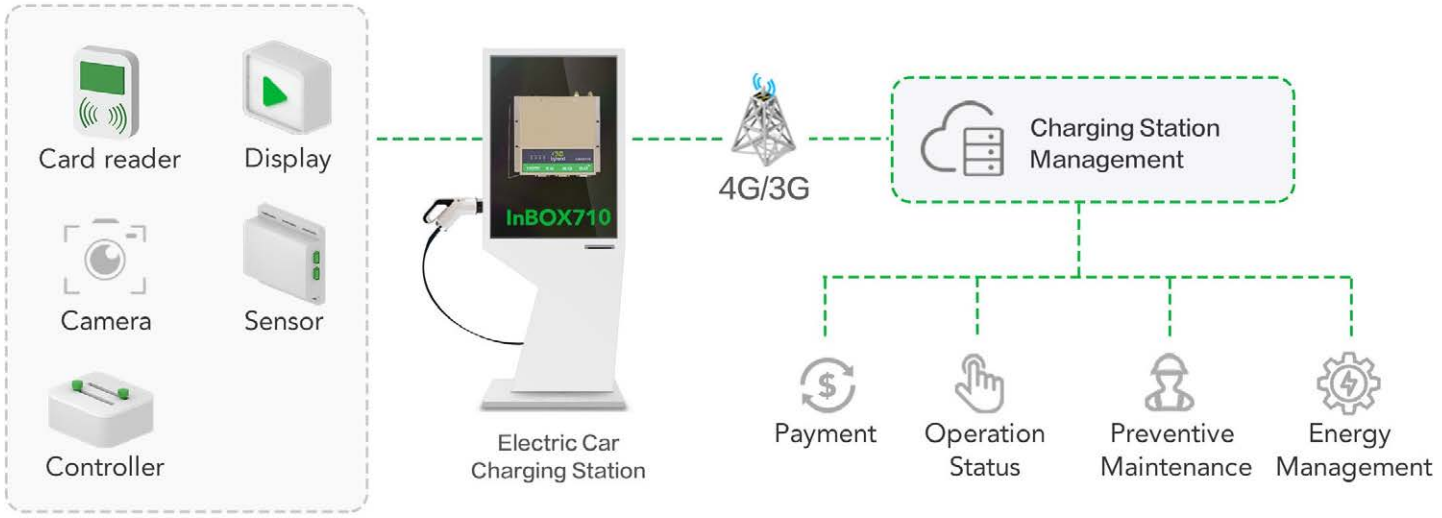
SMART EV CHARGING KIOSK

Remote Management, Dynamic Interaction & Custom Applications



CUSTOMER REQUIREMENTS

- Monitoring of all EV charging kiosks.
- Interaction, multiple payment methods
- High EMC level, wider temperature range
- Ruggedized enough to withstand harsh environments



Who Are We?

Pioneering IoT for 21 Years

2001 — Founded as M2M startup, Pioneer of IoT

2005 — Selected by GE Healthcare; Now a global supplier of GEHC

GE Healthcare

2007 — Delivered industrial cellular modem for China State Grid

STATE GRID CORPORATION OF CHINA

2012 — Schneider CAPP and Rockwell Product Partner

Collaborative Automation by Schneider Electric

Encompass™ Product Partner — A ROCKWELL AUTOMATION PARTNER Asia Pacific

2017 — Proven by world-class customers

SIEMENS ABB E·ON RWE

2019 — New factory construction completed

2020 — Listed on SSE STAR Market Tech Board as of Feb.12, 2020

2021 — US Office Relocation With Greater Warehouse and Faster Delivery

*STAR Market is a Nasdaq-style tech board – the Science and Technology Innovation Board at Shanghai Stock Exchange.

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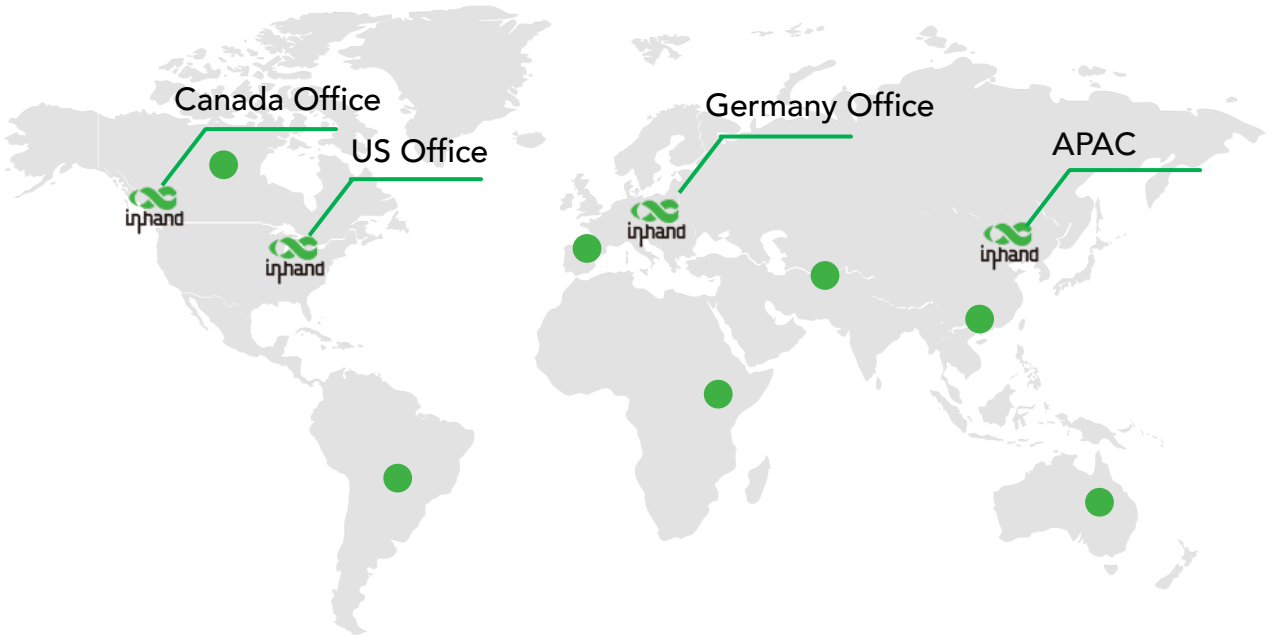
Global Coverage



Employees 400+
R&D Team 140+

2021 Total Sales $70 Million+
550K+ IoT products shipped worldwide

New factory plant in Jiaxing, China, open since July 2020

IoT/M2M Products & Solutions

Application Layer	"Cloud + Edge" IoT Solution	Cloud-Managed Networking Solution Distribution Network Monitoring System (IWOS) Smart Vending System
Platform Layer	Device Cloud PaaS Platform	InHand Device Networks Cloud Platform
Network Layer	IIoT/M2M Products	Edge Router Industrial Cellular Router IoT Edge Gateway Industrial Cellular Modem Vehicle Gateway Industrial Computer
Sense & Control Layer	Sensors, Controllers, Industrial Devices	Sensor PLC Industrial Device

Quality Commitment & Support

High Quality with
ISO 9001: 2015, RoHS
and CE certifications

3-year
Warranty

Free Technical Support
16 Hrs per Day
5 Days per Week

Q & A

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