

# WECON V-NET

## WECON V-NET&Gateway Features

### Remote Operation — All Under Control

WECON V-BOX and PI3000ig series IoT HMI transmit the data obtained from mechanical equipment to WECON V-NET. No matter how many devices there are, you can "bring them all in one platform." By using the V-NET APP, you can easily get Unattended Operation, Device Management, Remote Commissioning and Data Connectivity.

### Device Management

Even if there are thousands of devices, you can quickly locate them by mapping on V-NET. V-NET's Device Template frees you from repeated parameter configuration, and V-NET's Role Management allows you to hand-over the management of the devices to employees with safety.

### Data Connectivity

WECON V-NET integrates OPC Tool and HTTP API, which conveniently provides data access for third-party systems such as ERP, SCADA, MES, etc.

### Unattended Operation

V-NET presents on-site data truly and objectively, so that staff do not need to be on-site.

### Remote Commissioning

Remote commissioning and downloading of PLC and HMI projects.

### Data Collection — Connect Devices to IIoT platform

Wecon V-BOX Cloud Mode is able to build communication with 300+ various PLC types, and connects to platforms by HJ212 protocol, MQTT, OPCUA (in developing), etc. Lua script can easily achieve the description of protocol and assist the connection between devices and platform by simple configuration of monitoring points. The V-BOX in Cloud Mode is the universal IIoT gateway for various industrial IoT platform connecting on-site data. V-BOX can establish a simple, efficient, and real-time communication bridge between IIoT platform and devices.

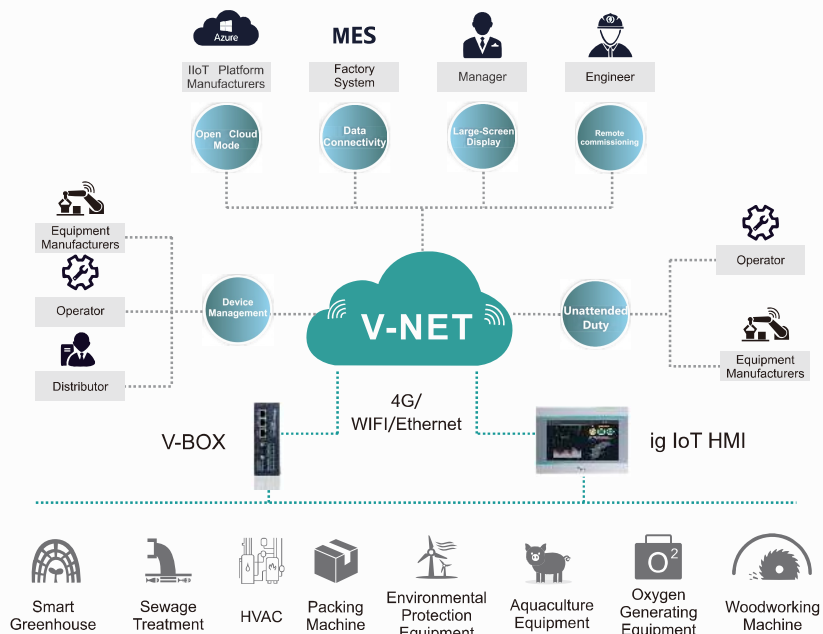
### System Integration — Large Screen Display, Interconnection Between Devices



With the fast development of the IIoT, users have higher requirements for automation system integration projects. The on-site data collected by WECON V-BOX can help users to perfectly display the overall status of the project through large-screen display maps, Cloud SCADA, etc., so that the overall situation can be seen on one screen directly. Even if multiple projects are far away in space, as long as these projects are using V-BOX and V-NET, then the data mapping function of V-NET can also help devices located differently work coordinately and share data with each other.

# WECON V-NET

## WECON V-NET&Gateway Architecture

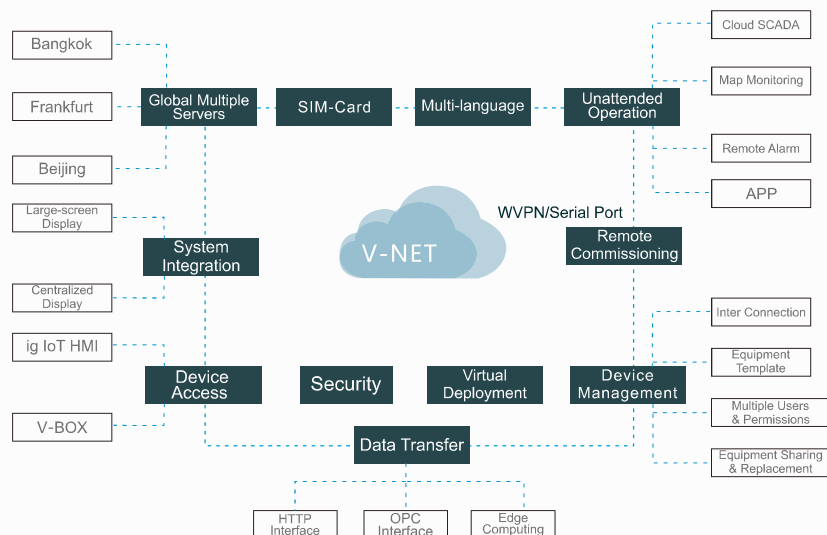


### Five Major Measures to Ensure Security

	<b>Hardware Security</b> To Identify and reject unauthorized access requests to prevent the gateway hardware from being illegally copied. To Confirm the control request sent by the platform to ensure the safety of device communication.
	<b>Platform Security</b> To prevent unauthorized devices & users from accessing the platform; To prevent user data from being used or accessed without authorization.
	<b>Access Security</b> To block user operations which is improper or probably caused dangerous; To verify user ID and remind users to protect personal information.
	<b>Communication Security</b> To prevent communications proactively from being eavesdropped and hijacked, and to avoid leakage of user information.
	<b>Data Security</b> To use the world's top cloud server providers such as Huawei or Amazon, WECON promises not to use or share user data.

# WECON V-NET

## WECON V-NET&Gateway Functions



# WECON V-NET

## Edge Computing

### Edge Computing — Powerful Lua

Easy to study, flexible for using and high efficiency.

Easily connect to 3rd-party IIoT platforms

User-defined protocols



Quick edge computing

Cross-regional device inter connection

## Device Management

### All in One

To locate the devices accurately through map index, category search, fuzzy search, etc.

### One-key Configuration

To download and modify the configuration of the V-BOX of the same model by using the template function.

### Role Management

Managers can assign V-NET permissions to users at the corresponding levels by establishing users at various levels (4 levels in total), no matter how many devices there are, they could be managed by one person.

## Global Servers

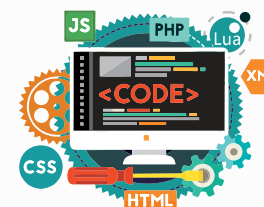
Server Location	Providers	Country or Region
Beijing	HUAWEI CLOUD	China
Bangkok	HUAWEI CLOUD	Southeast Asia, East Asia and Oceania
Frankfurt	AWS by Amazon	Europe, America, Middle East and India

## Multilingual

- Chinese & English for main interface;
- User-defined three kinds of languages supported in project of Cloud SCADA;
- Languages switchable.

## Easy Programming

- Online editor, Online programming without local IDE;
- Auto follow script, more faster;
- Online analysis tools, grammar tips;
- Rich functions for mathematics and data processing.



## Multiple Execute Methods

- Multiple execute methods;
- Remote synchronization and local execution;
- Online configuration;
- Execute locally.



# WECON V-NET

## Virtual Deployment

Users of virtual deployment can customize an exclusive tool kit for V-NET.  
Tool kit includes: exclusive domain name, company logo, customized APP and others.  
Users can use all functions of V-NET through this tool kit.

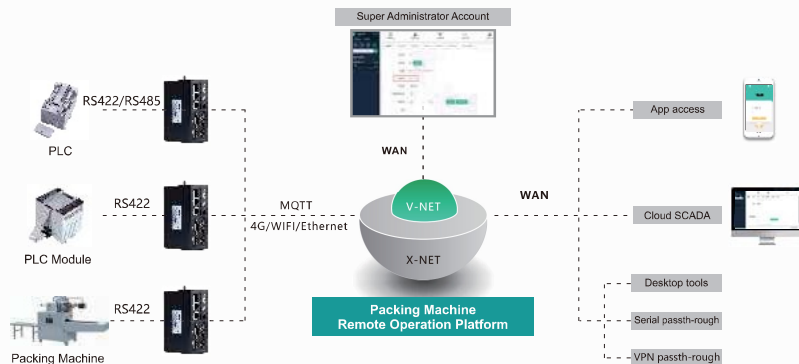
Items	V-NET	V-NET Virtual deployment
Platform Name	V-NET System	Make your own name
Domain Name	www.v-box.net	Make your own domain name
APP and Desktop tools	APP and desktop tools with WECON Logo	Customizable Logo and appearance
User Access	Users registered under V-NET	Users registered under your domain name
Cloud SCADA, Passthrough and Gateway Management		Same with V-NET users
User Level and Rights Management		Same with V-NET
Device Templates ( Developing)		Same with V-NET
Gateway Bind		Same with V-NET
Gateway Name	V-BOX	Make your own name
Gateway Model	V-BOX H Series, E Series	Make your own name
Super Administrator Account	N/A	YES

## V-NET Virtual Deployment Privileges

Free Cloud Charge	No additional cloud services cost are required
Easy Deployment	Can be used after simple configuration
Free Maintenance	WECON is responsible for platform maintenance and upgrade
Platform Naming Rights	Rights of naming your own cloud platform
Direct Access	Users access cloud platform through your own domain name
Logo Display	Your company Logo display
Super Administrator Account	Administrative rights for the users under the platform with deactivated, enabled, supervised and so on
Model Rename	Rename and define V-BOX model by yourself

## V-NET Virtual Deployment Case

A company, a packaging machinery manufacturer, need an IoT platform for their products through V-NET virtual deployment. They can enjoy the service without maintenance charge, and importantly, to improve their factory efficient and services.



# WECON V-NET

## Remote Pass-through

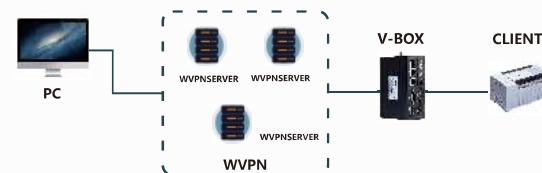
Machinery and equipment products are sold throughout the country or even worldwide. In order to facilitate transportation and packaging, some machinery needs to be disassembled and then installed again in the factory. And also, most of the machines need on-site parameter debugging after installation, so the manufacturers have to send their own electrical engineers to the site for machine commissioning. But pass-through function makes it possible for PLC remote commissioning through V-BOX.

## Remote Serial Port



## WECON WVPN

The principle is to construct a secure and stable virtual private network (VPN) between computer and PLC. It allows programming software to pass the obstacles of gateway and router to realize direct communication with PLC.



## High Security of WVPN

- All data transmission channel is encrypted by SSL/TLS;
- Mutual certificate authentication(PC, WVPN SERVER and V-BOX digital signature and certificate mutual recognition);
- All Valid certificates to ensure the maximum security;
- Independent between Devices: All pass-through devices are not visible to each other;
- Dynamic Passthrough Principal: Users can set their own pass-through rules to prevent from malicious use;
- Blacklist and Whitelist: Guarantees the independence, security, and manageability of each device.

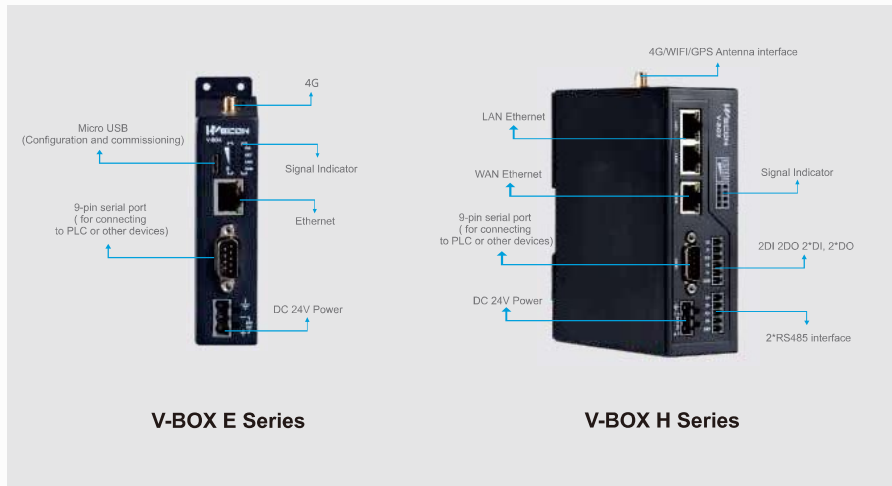
## Global Servers



WVPN has servers deployed in Beijing,Bangkok, and Frankfurt (Will deploy more servers in the world in the future). It allows users to select the fastest WVPN SERVER worldwide, WECON will spare no effort to build high availability for WVPN remote pass-through.

# Industrial IoT Gateway

## Hardware



### Protocols

300+ protocols of Ethernet or serial ports PLC

### Installations

DIN guide rail or screwing installations

### Built-in Digital Input and Output

2\*DI & 2\*DO relay (H Series)

### Pass-through Function

VPN penetration, serial port, PLC remote debugging or download

### Interfaces

3 serial ports (4 in 3), 3 Ethernet ports, WIFI(Optional) (H Serial V-BOX only) are standard; RS485/RS232/RS422; 4G(Optional) and GPS position(Developing).

### Quick Access

Connect to V-NET easily by plugging in network cables or IoT SIM card

### Indicators

Connection  
4G Signal Intensity  
PLC Communication Status Prompt

### Edge Computing

Simple logic control could be realized by built-in Lua Script.

### Open Cloud Mode

V-BOX can be connected to third-party platforms through Open Cloud Mode.

# Industrial IoT Gateway

## Open Cloud Mode

### Who Need Open Cloud Mode?

**MES Manufacturers:** V-BOX provides solution for MES system connectivity.  
**IoT platforms:** V-BOX provides remote connection for various IIoT platforms.  
**SCADA systems:** V-BOX provides data acquisition for SCADA systems.

### What Can V-BOX Open Cloud Mode Do?

### For Platform

V-BOX connect to IIoT platform over MQTT through easy built-in Lua scripts of V-BOX.

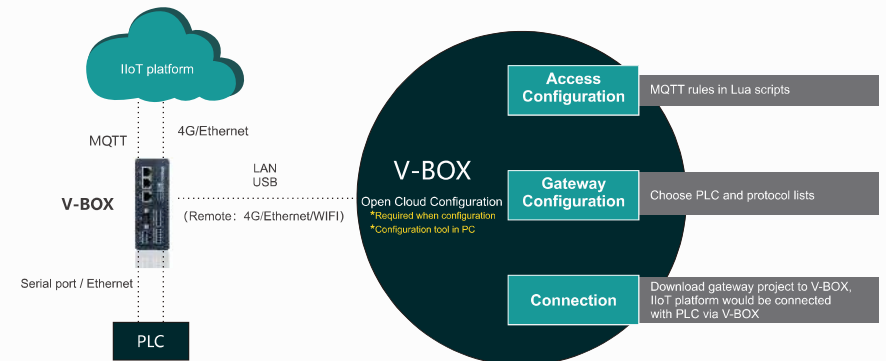


IIoT platform supported. More platform coming soon...

### For Devices


V-BOX supports most branded PLC protocol, which to connect PLC and platform. Supports over 300 branded PLC protocols

## HOW V-BOX Open Cloud Mode Work?



# Industrial IoT Gateway


## V-BOX E Series Specifications

General			
			
Model	E-00		E-4G
Item	Specifications		
CPU	ARM 9		
Storage	Flash	128MB	
	RAM	DDRII 64MB	
	SD Card	N/A	
I/O Ports	USB	OTG: USB HOST/USB DEVICE	
	Serial Ports	COM1: RS232, RS422/RS485 (2 in 1)	
	Ethernet	1 Ethernet Port	
	WIFI Module	N/A	
	4G Module	N/A	4G
Power	Power Supply	24V DC (12~28V DC)	
	Power Consumption	< 10W	
Dimension	Enclosure	Cold-rolled steel sheets	
	Dimension (W*H*D)	101.0mm*73.2mm*26.8mm	
	Wall Hanging Dimension	110.0mm*15.6mm	
	Weight (KG)	0.26	
Environment	Vibration Resistance	IEC61131-2 Standard	
	Storage Temperature	-20℃~70℃	
	Working Temperature	-10℃~60℃	
	Relative Humidity	10~85%RH (Non-condensing)	
CE Certification		CE Marked	
FCC Certification		FCC Class A Marked	
Real-time Monitoring Points		200	250
Alarm Monitoring Points		50	100
History Monitoring Points		20	50
History Storage/Storage capacity		60 Days/1 Million	90 Days/1 Million
Normal Pass-through		YES	
WVPN Pass-through		N/A	
Edge Computing		N/A	YES
API Interface		YES	
Remote Update		YES	
Configuration download / upload		YES	
Off-line Transmission		YES	
GPS		N/A	LBS
E-4G model frequency code			
LTE FDD	LTE TDD	WCDMA	GSM
B1/B3/B5/B8	B34/B38/B39/B40/B41	B1/B5/B8	900/1800MHz

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# Industrial IoT Gateway

## V-BOX H Series Specifications

General						
						
Model	H-00		H-WF		H-4G	H-AG/H-SG
Item		Specifications				
CPU		Cortex A7				
Storage	Flash	128MB				
	RAM	DDRIII 128MB				
I/O Ports	USB	HOST/DEVICE: USB OTG Switch				
	Serial Ports	COM1: RS232, RS422/RS485 (2 in 1)				
		RS485(2 in 1) 【COM2: RS485, COM3: RS485】				
	Ethernet	3 Ethernet Ports				
	WIFI Module	N/A	YES	N/A	N/A	
	4G Module	N/A	N/A	4G	4G (Global)	
Power	I/O	2 inputs with optocoupler isolation; 2 relay outputs				
	Power Supply	24V DC (12~28V DC)				
	Power Consumption	<10W				
Dimension	Enclosure	PC+ABS (				
	Dimension (W*H*D)	131.0mm*100.5mm*46.0mm				
	Weight (KG)	0.3				
Environment	Vibration Resistance	IEC61131-2 Standard				
	Storage Temperature	-20℃~70℃				
	Working Temperature	-10℃~60℃				
	Relative Humidity	10~85%RH (Non-condensing)				
CE Certification		CE Marked				
FCC Certification		FCC Class A Marked				
Real-time Monitoring Points		300	300	500	600	
Alarm Monitoring Points		200	200	300	300	
History Monitoring Points		50	50	100	100	
History Storage/Storage capacity		90 Days/1 Million		180 Days/1 Million		
Normal Pass-through		YES				
WVPN Pass-through		YES				
Edge Computing		YES				
API Interface		YES				
Remote Update		YES				
Configuration download /upload		YES				
Off-line Transmission		YES				
GPS		N/A		LBS	LBS/GPS	
H-4G model frequency code						
LTE FDD	LTE TDD	TD-SCDMA	WCDMA	CDMA	GSM	
B1/B3/B5/B8	B34/B38/B39/B40/B41	B34/B39	B1/B8	BC0	900/1800MHz	
H-AG model frequency code						
LTE FDD			LTE TDD	UMTS	GSM	
B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/ B19/B20/B25/B26/B28			B38/B39/B40/B41	B1/B2/B4/B5/B6/B8/B19	B2/B3/B5/B8	

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