



UA Series IIoT Cloud Solution



Azure



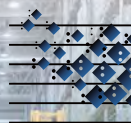
IBM Cloud



amazon
web services



UA Series **Easy planning**
IIoT Communication Server



OPC UA



MQTT.ORG



Vol. UA_3.21.05_EN

IIoT Communication Server: UA Series

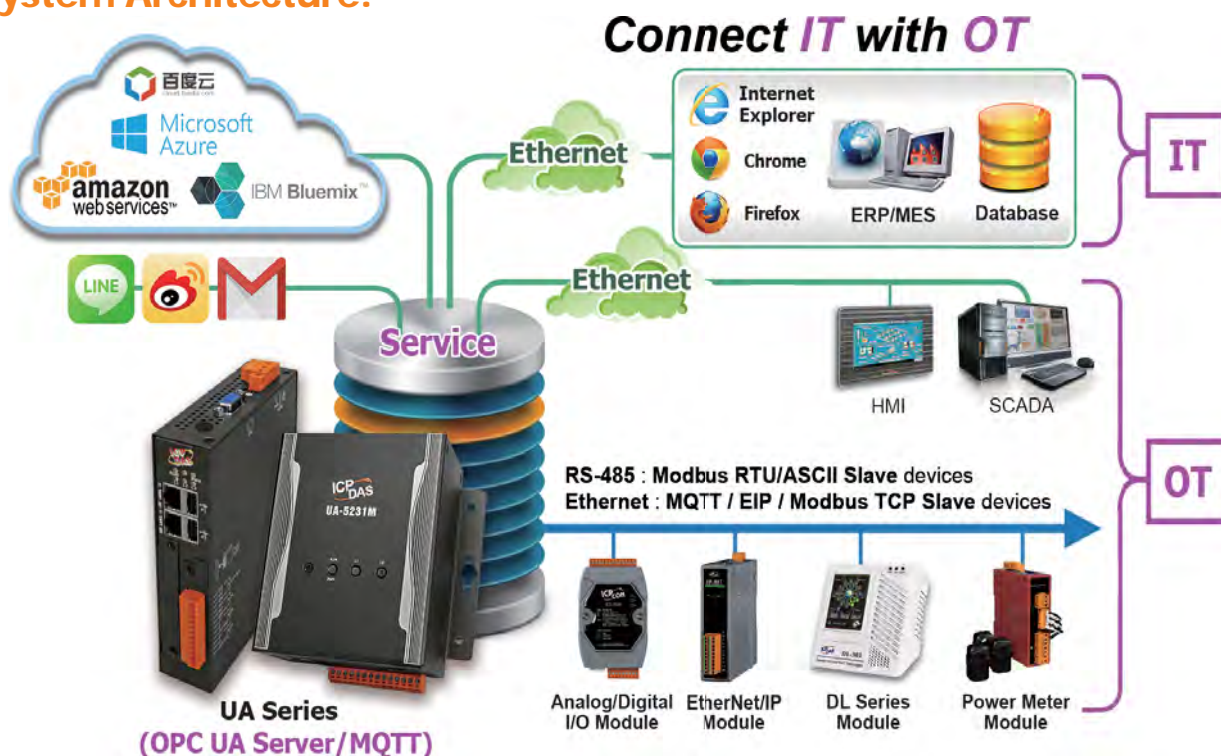


UA Series IIoT Communication Server: Connect IT with OT, Integrate Cloud and Web APPs

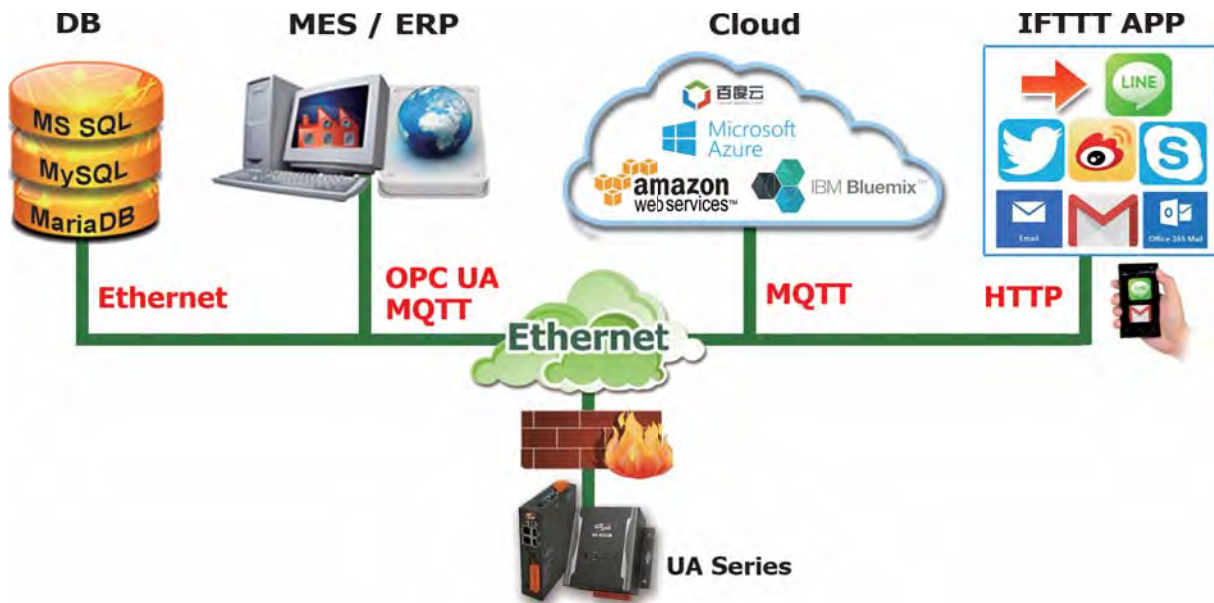
The IIoT Cloud Solution of ICP DAS provides UA series of IIoT Communication Server to upgrade the front-end devices to the Cloud, connect IT with OT, link Cloud and Web APPs, and integrate the cloud-based Internet of Things (IoT). This solution can improve system performance and enhance global IIoT competitiveness of the system.

- Built-in **OPC UA**, the industrial communication standard: connect OT to IT for integrating devices to the Cloud.
- Built-in **MQTT**, the active IoT transmission technology: accelerate data exchange and optimize the network resources.
- Support **Data Logger**: save I/O data directly to Local CSV log file or remote database.
- Support **IFTTT** for Cloud logic control: send device event notifications to LINE, Twitter, Mail, etc. over 500 APPs.
- Support **Modbus Protocol**: Connect Modbus TCP/RTU/ASCII Remote I/O Modules.
- Support **EtherNet/IP Protocol**: Connect EIP-2000 Series EtherNet/IP Remote I/O Modules of ICP DAS.
- Support **Cloud Platforms**: Connect to Amazon AWS, Microsoft Azure or other IoT Cloud platforms to send over the I/O data.

System Architecture:



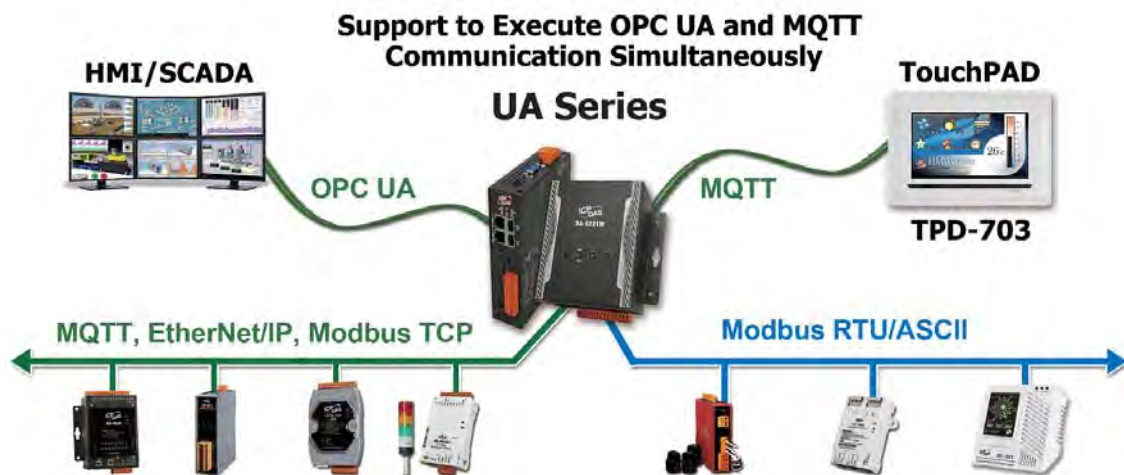
IT Integration Technology:



Technology:

- **OPC UA :** **OPC UA** The Industrial Communication Standard
- **MQTT :** **MQTT** The IoT Active Transmission Technology
- **Data Logger :** **LOG DB** I/O data save directly to Local LOG file or Remote Database
- **IFTTT :** **IFTTT** The Cloud Logic Control (IF This Then That)
- **Cloud :** The IIoT Cloud Platform Connection Technology

OT Integration Technology:



Technology:

- **OPC UA :** **OPC UA** The Industrial Communication Standard
- **MQTT :** **MQTT** The IoT Active Transmission Technology
- **Modbus :** **Modbus** A protocol widely used within Industrial Automation Systems
- **EtherNet/IP :** Industrial Ethernet protocol, based on TCP/IP protocol and compatible with factory and enterprise networks

Selection Guide:



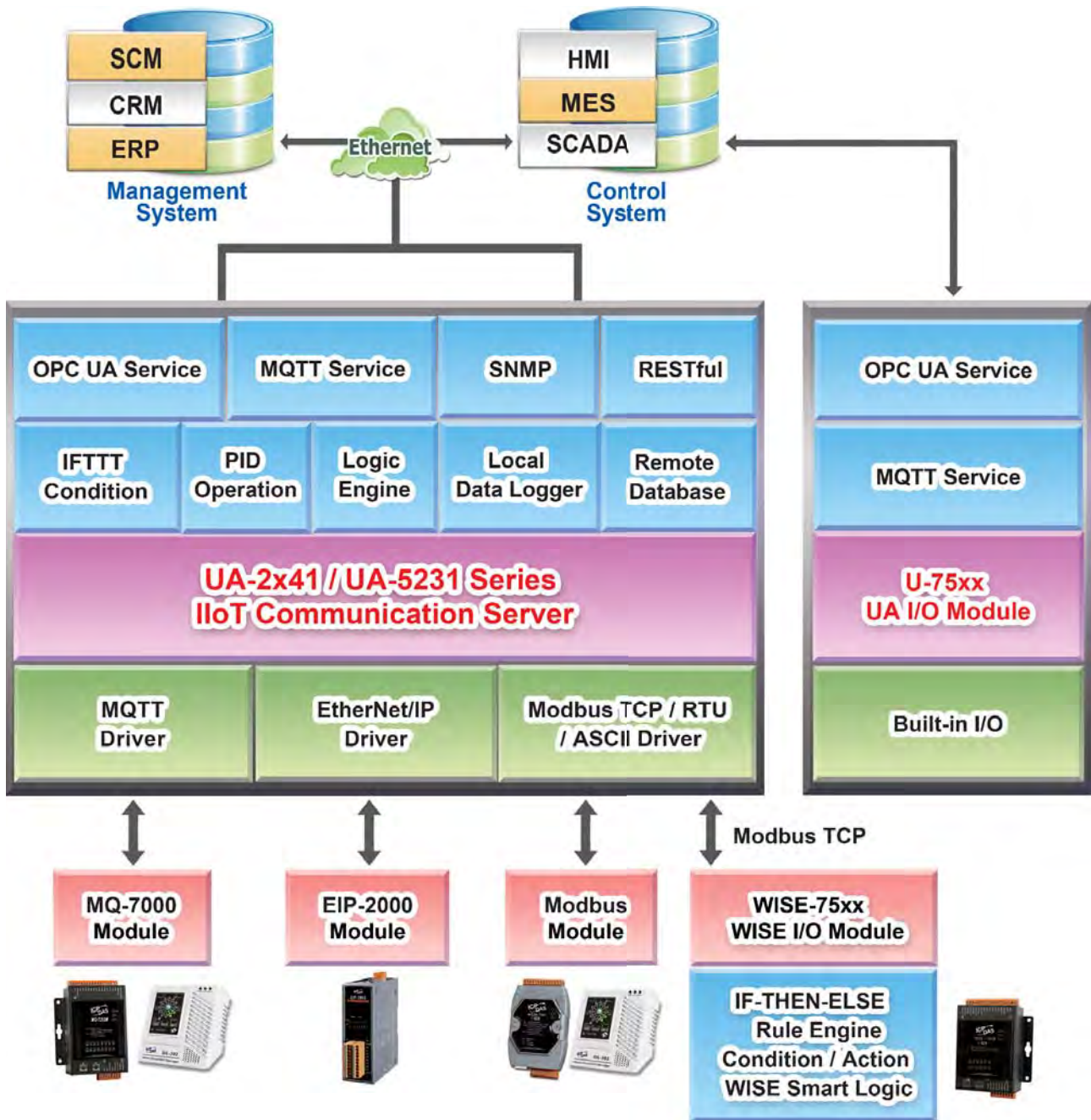
Hardware

Model	UA-2841M UA-2841M-4GE/4GC	UA-2241M UA-2241MX-4GE/4GC	UA-5231 UA-5231M	UA-5231M-3GWA UA-5231M-4GE/4GC
System / Module				
OS	Linux Kernel 4.1.15	Linux Kernel 3.2.14		
CPU	Quad Core ARM, 1.6 GHz	ARM, 1.0 GHz		
SDRAM	DDR3 1 GB	DDR3 512 MB	DDR3 512 MB	
Flash	8 GB	512 MB	8 GB	
Expansion Memory	microSD socket with one 4 GB microSD card (support up to 32 GB microSDHC card. UA-2841M can up to 2 TB microSDXC card)			
Communication Ports / Expansion				
Ethernet	2 x RJ-45		1 x RJ-45	
USB	2 x 2.0 host		1 x 2.0 host	
Serial Port	4 (2 x RS-232 / 2 x RS-485)			
	2 x Isolated RS-485 (2500 VDC)			
Port Expansion	Optional XV-board		-	
Environmental / Power				
Temperature	Operating T.: -25 ~ +75°C / Storage T.: -40 ~ +80°C / Humidity: 10 ~ 90% RH (non-condensing)			
Input Range	+12 ~ +48 VDC			
Consumption	Ethernet: 10 W -4GE/4GC: 11.7 W	Ethernet: 4.8 W -4GE/4GC/3GWA: 6.5 W		
Wireless Communication (Only For UA-2x41MX-4GE/4GC, UA-5231M-4GE/4GC/3GWA)				
3G System	-3GWA	WCDMA: 850/900/1900/2100 MHz		
	-4GE	WCDMA: 850/900/2100 MHz		
	-4GC	WCDMA: 900/2100 MHz, TD-SCDMA 1900/2100 MHz, CDMA2000 (BC0) 800 MHz		
4G System	-4GE	FDD LTE: B1/B3/B5/B7/B8/B20 bands (Asia Only; Frequency Band for: Except China)		
	-4GC	FDD LTE: B1/B3/B8 bands TDD LTE: B38/B39/B40/B41 bands	(Asia Only; Frequency Band for: China Only) (Asia Only; Frequency Band for: China Only)	

Software

Model	UA-2841 Series	UA-2241 Series	UA-5231 Series
Protocol Connection Support			
OPC UA Server	Max. 8000 Tags Max. 40 Client Sessions	Max. 8000 Tags Max. 20 Client Sessions	
MQTT Broker	Max. 1800 Client Devices	Max. 400 Client Devices	
MQTT Client	Max. 400 Connections	Max. 200 Connections	
Modbus TCP Master	Max. 200 Modules	Max. 100 Modules	
Modbus RTU/ASCII Master	Max. 32 Modules x 3 ports (UA-2x41 can expand by 1 optional XV511i board)		
EtherNet/IP Scanner	Max. 100 Modules	Max. 50 Modules	
SNMP	10 Read / 10 Write	-	
RESTful	20 Read / 1 Write	-	
Database Connection (MS SQL, MySQL, MariaDB)			
Remote Database	Max. 2 Databases per Time, Max. 1000 Tags	1 Database per Time, Max. 1000 Tags	
Cloud Support			
IoT Cloud Platform	Azure (MS), AWS (Amazon), Bluemix (IBM), Baidu		
Web APP	IFTTT Logic Triqger APP (Line, Twitter, Gmail ...)		

Function Architecture:



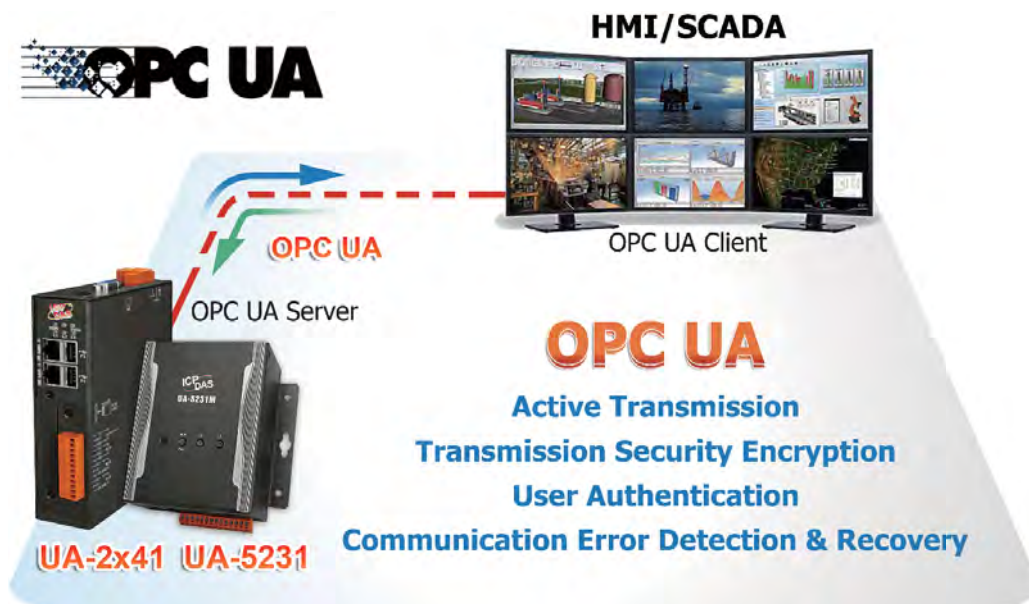
UA provides Function Wizard for setting functions easy and quick

UA products afford many valuable functions as showing in the Function Architecture picture. The functions are multiple, but the setting is easy and quick. Because the UA provides a Function Wizard "Step Box" in the Web UI to guide users step by step to complete the project or function. It provides many items for setting the Communication Conversion (OPC UA, MQTT, SNMP, RESTful, Modbus, EtherNet/IP ...), Certificate Setting(OPC UA, MQTT), Cloud Platform Connecting (Amazon AWS, IBM Bluemix, Microsoft Azure, Baidu...), Local Data Logger, Remote Database (MS SQL, MySQL, MariaDB), Function Configuration, PID Operation, Condition Trigger the APP Message Notification (IFTTT: Line, Twitter, email...), I/O Module connection and setting, and will be more. It will help users to set projects easily and quickly.

Features:

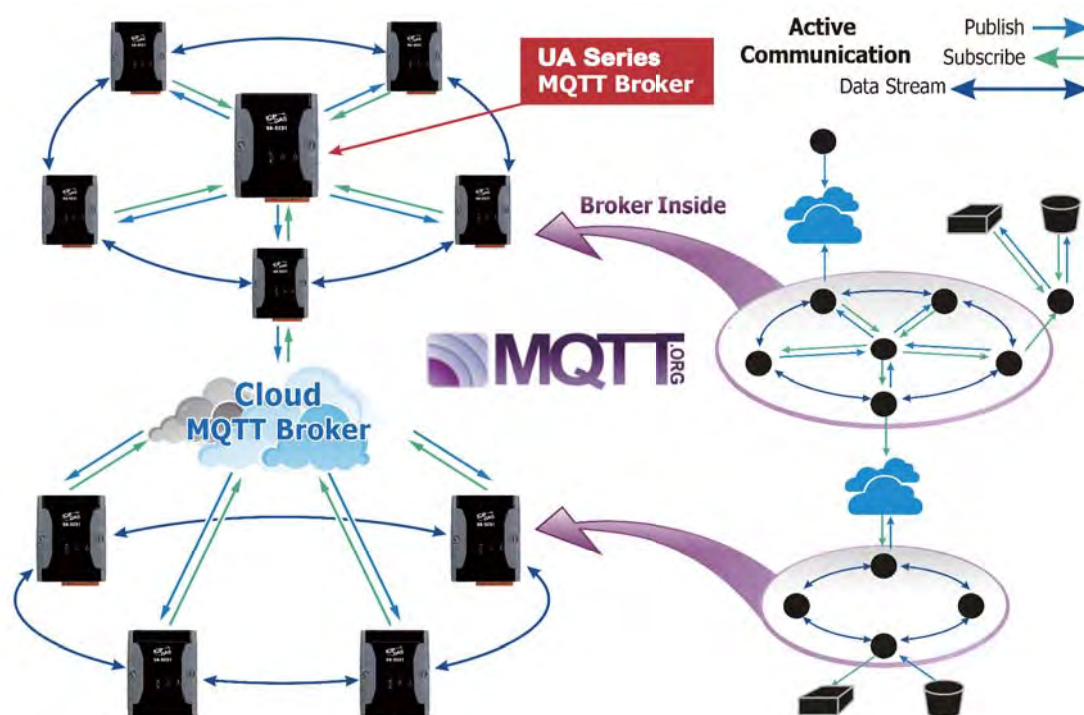
 Built-in OPC UA Server Service

Compliance with IEC 62541 Standard. Provides functions of **Active Transmission, Transmission Security Encryption(SSL/TLS), User Authentication (X.509 Certificates/Account password), Communication Error Detection and Recovery**, etc. to connect SCADA or OPC UA Clients. Allowed up to 8000 OPC UA tags and up to 20 sessions for the OPC UA Client connection.



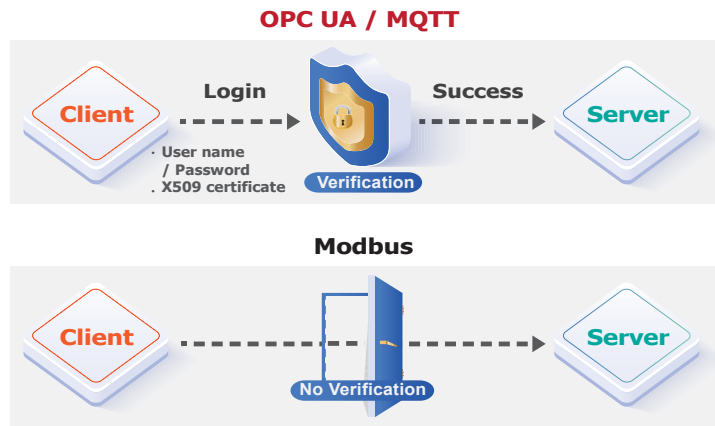
Built-in MQTT Broker Service

MQTT Broker inside and Compliance with MQTT V.3.1.1 protocol. Provides functions of **IoT Active M2M Transmission, QoS Quality Service, Retain Mechanism, Identity Verification, Encryption, Last Will, MQTT Client Drivers**, etc. The Broker can connect up to 400 MQTT Clients.



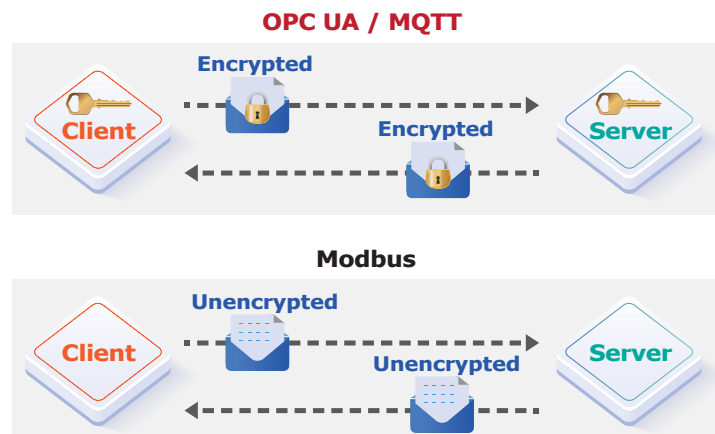
Support Identity Authentication

Identity Authentication			
ICP DAS UA Solution	OPC UA	ID/Password, Anonymous, Certificate	Yes ✓
	MQTT	ID/Password, Anonymous, Certificate	
Traditional	Modbus	None	



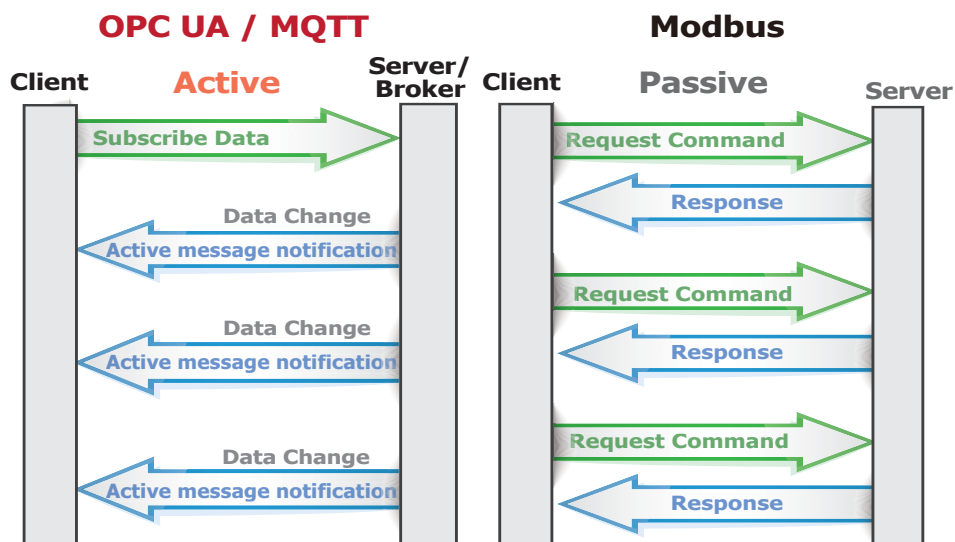
Support Data Encryption

Data Encryption			
ICP DAS UA Solution	OPC UA	SSL/TLS Encryption	Yes ✓
	MQTT	SSL/TLS Encryption	
Traditional	Modbus	None	

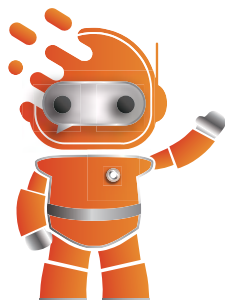


Active Data Transmission

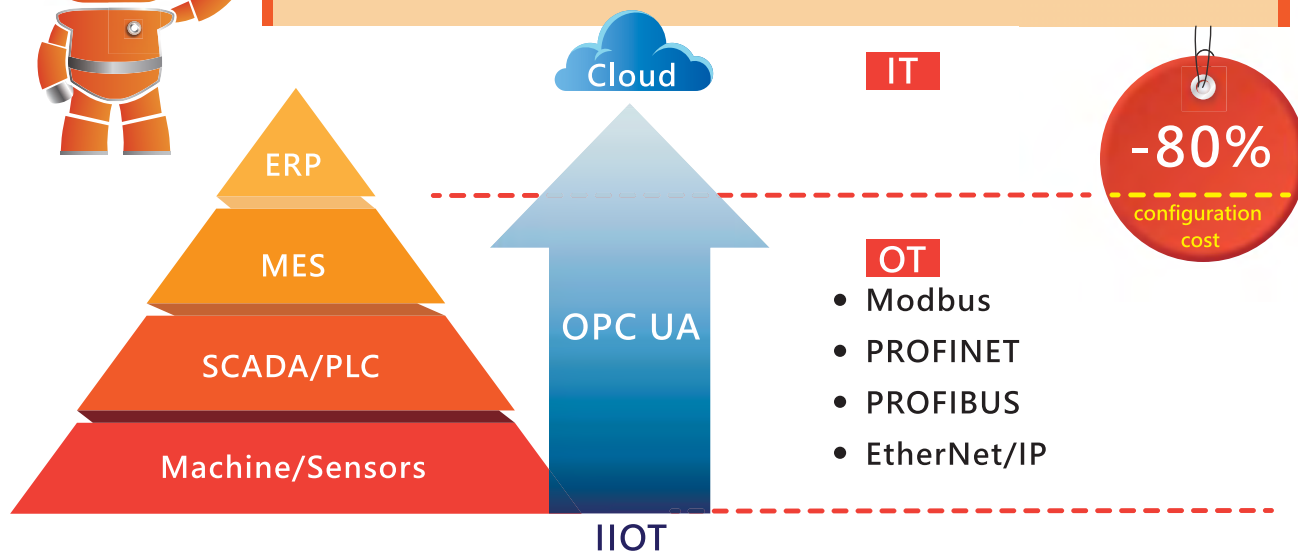
Data Transmission				
ICP DAS UA Solution	OPC UA	Active	Yes ✓	Server sends Data to the Client
	MQTT	Active		Client publishes Data to Broker, and the Broker sends Data to other Clients
Traditional	Modbus	Passive		Request/Response (Wait for Master to poll the Data)



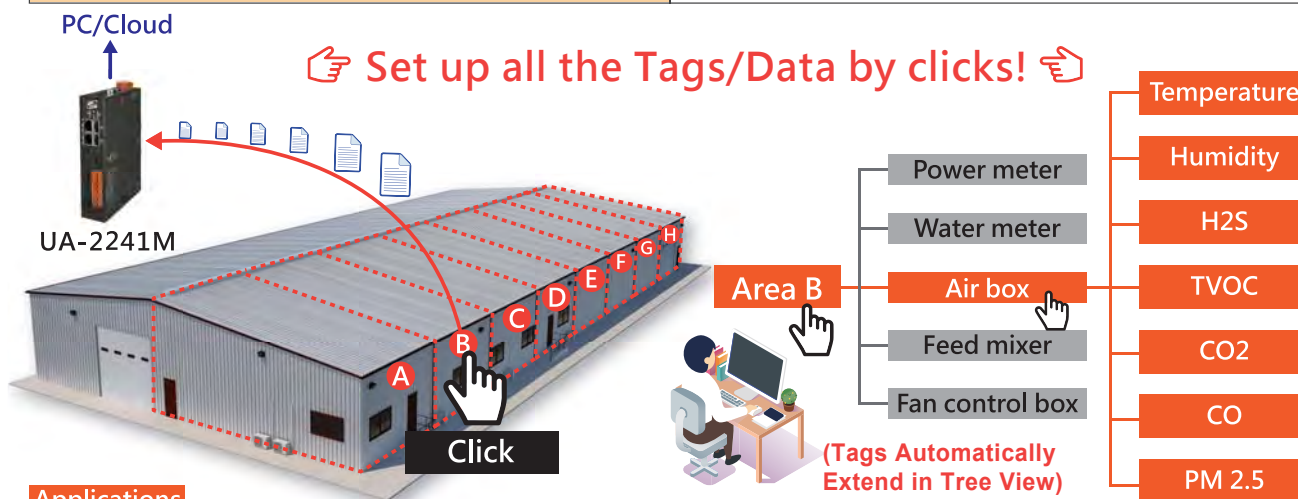
Easy Project Building



Using OPC UA protocol can help MES engineers & software development engineers **save 80% configuration cost** which is far in advance of competitors.



OPC UA (Easy)	Modbus (Hard)
STEP1 : Get the OPC UA Server URL Address	STEP1: Query the device IP table and get the linked device IP
STEP2 : Connect to the Server via the Client	STEP2: Set Modbus Master SW and make an IP connection
STEP3 : Browse/Subscribe Tags/Data in Server	STEP3: Search Tag Table and get the type and address range
	STEP4: Set Modbus Master SW and get device data
	STEP5: Set SW Tags table and assign recognizable names
	STEP6: Convert the device data to the actual value for the tag



Applications

Modern pig farms



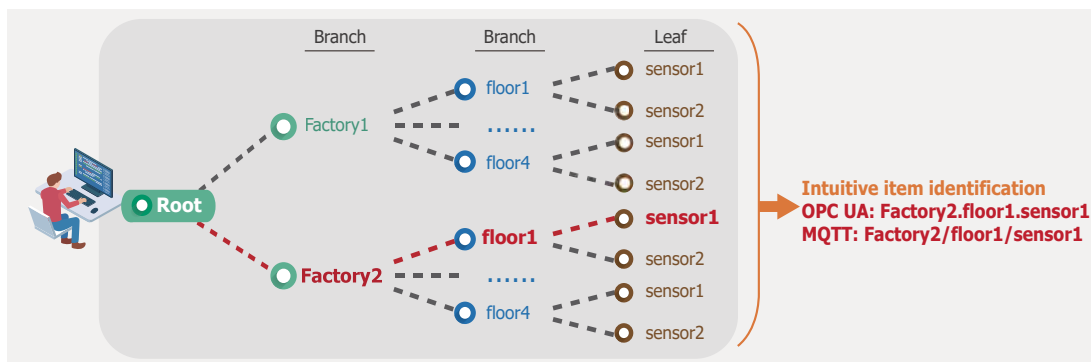
- Temperature
- Humidity
- H2S/TVOC
- CO2/CO
- Water supply
- Food supply
- Fan control

Chemical plant



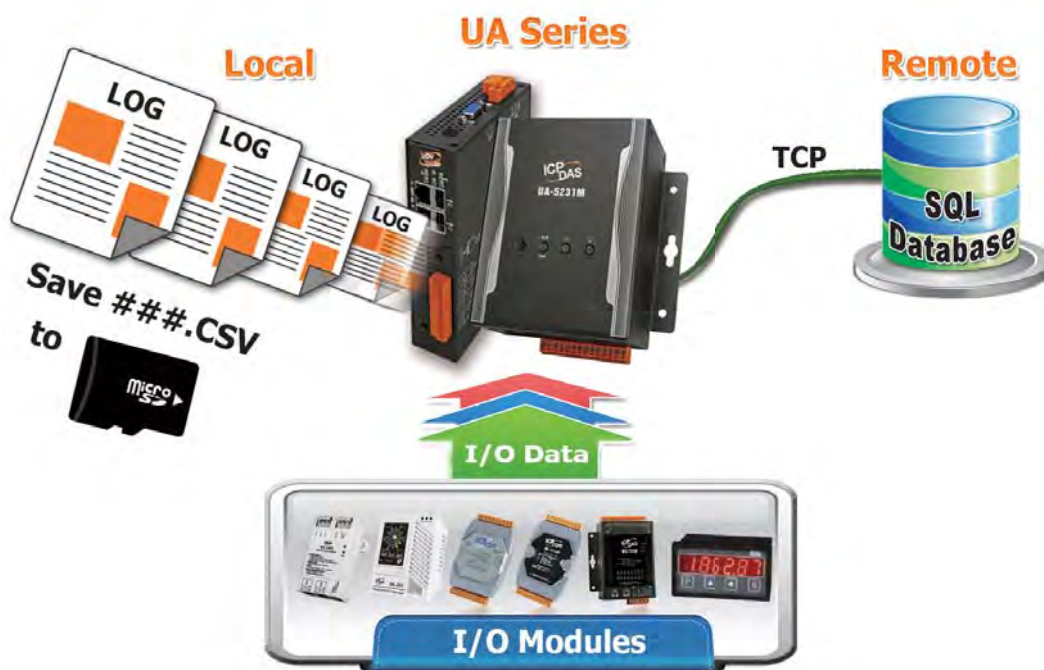
- Temperature
- Humidity
- Air quality sensor
- Power management
- Access control
- Liquidity monitoring
- Related I/O

Project Building				
ICP DAS UA Solution	OPC UA	Easy	Browse the Server Content	✔
	MQTT	Easy	Subscribe Topic from Broker	
Traditional	Modbus	Hard	Assign an ID and define a Data address, type... table, and then...	



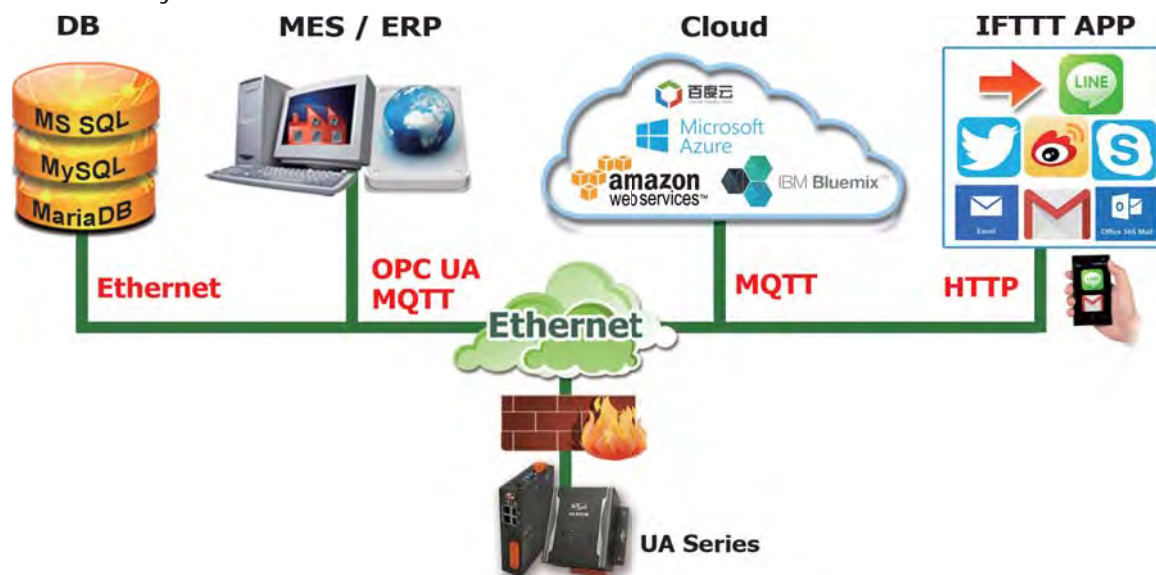
The screenshot displays a network traffic analysis tool interface. At the top, there are four tabs: "Address", "Function", "Length", and "Data". Below the tabs, a list of captured packets is shown, including details like protocol, source/destination IP, port, and length. On the left side, there is a small icon of a person sitting at a desk with a computer, representing a user or analyst.

UA series can collect devices I/O status and then directly save into remote side SQL Database (MS SQL, MySQL and MariaDB). UA series can also save I/O data into a CSV log file on the local side. Furthermore, users can set the time interval of which CSV file to generate and divide on the local side.



Support Logic Control IFTTT To Send Event Messages To LINE... APPs

UA can combine the IFTTT cloud platform functions and send messages to more than 500 **Web APPs** (such as LINE, Twitter, Calendar, Mail, Sina Weibo... etc.) when the special events occur. The device I/O change can be set to trigger the event of the IFTTT cloud service, and then the preset "That" Web Service (**e.g. LINE**) will do the action follow the IFTTT (If This, Then That) logic control, for example, the LINE will send a message to the specific user or group to handle the event immediately.

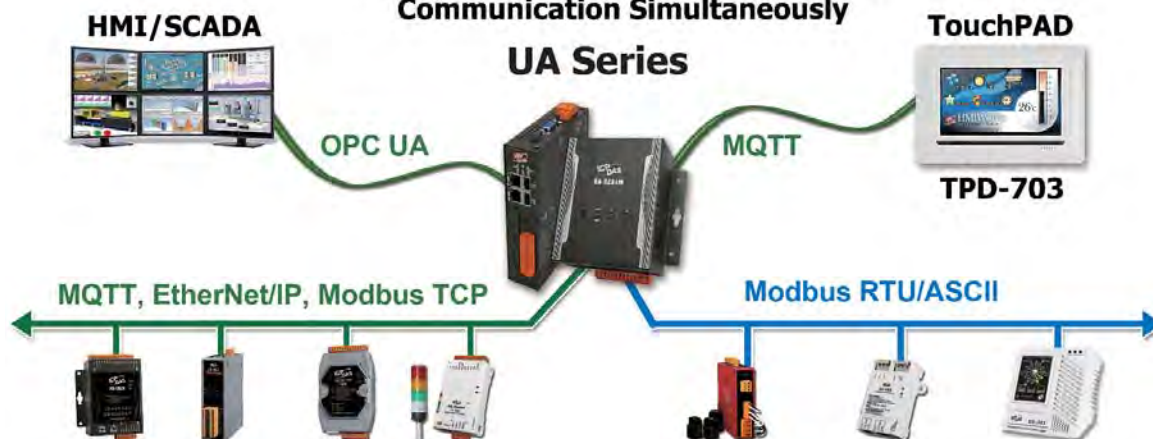


Support Ethernet and Serial Communication Modules

- **Ethernet** : UA supports **MQTT**, **Modbus TCP**, and **ICP DAS EtherNet/IP** modules
- **Serial** : UA supports **Modbus RTU/ASCII** modules (3 Serial ports)
- **UA Web UI**: users can quickly set up the modules and display the **real-time I/O status**.
- **Max. modules** supported by each connection:

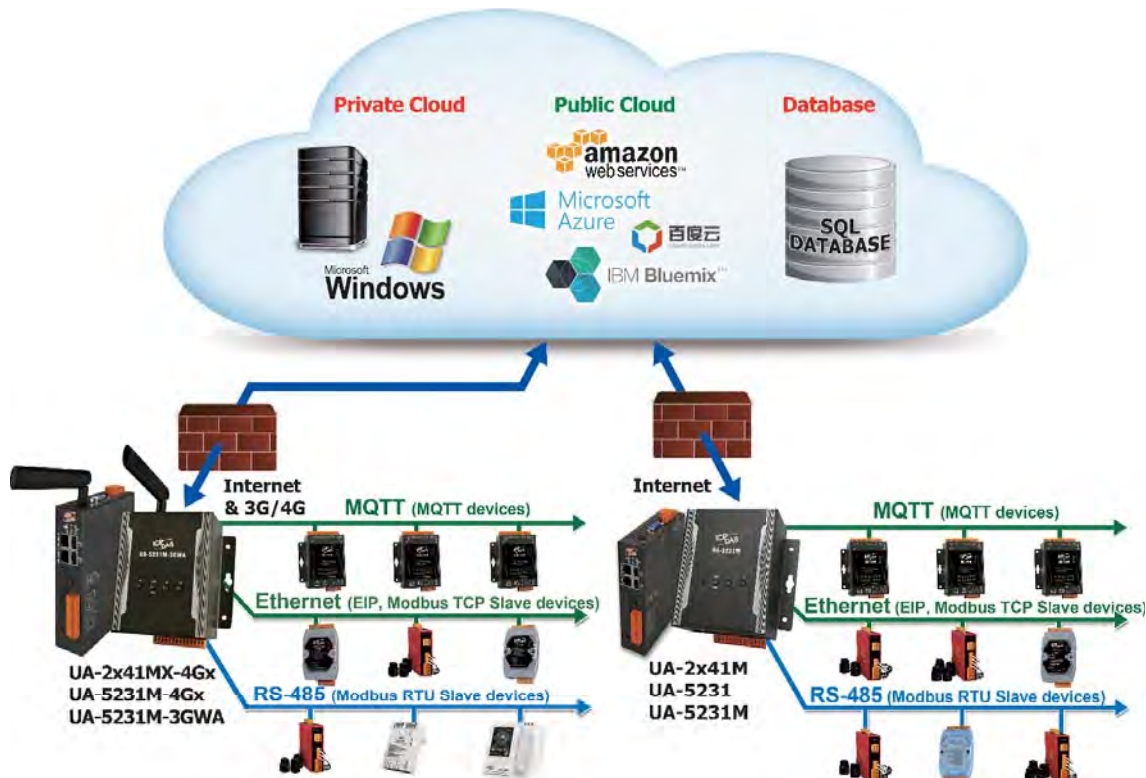
Communication UA Series	Ethernet			Serial
	MQTT	Modbus TCP	EtherNet/IP	Modbus RTU/ASCII
UA-2800	400	200	100	32 x 3 ports
UA-2200/5200	200	100	50	32 x 3 ports

Support to Execute OPC UA and MQTT Communication Simultaneously



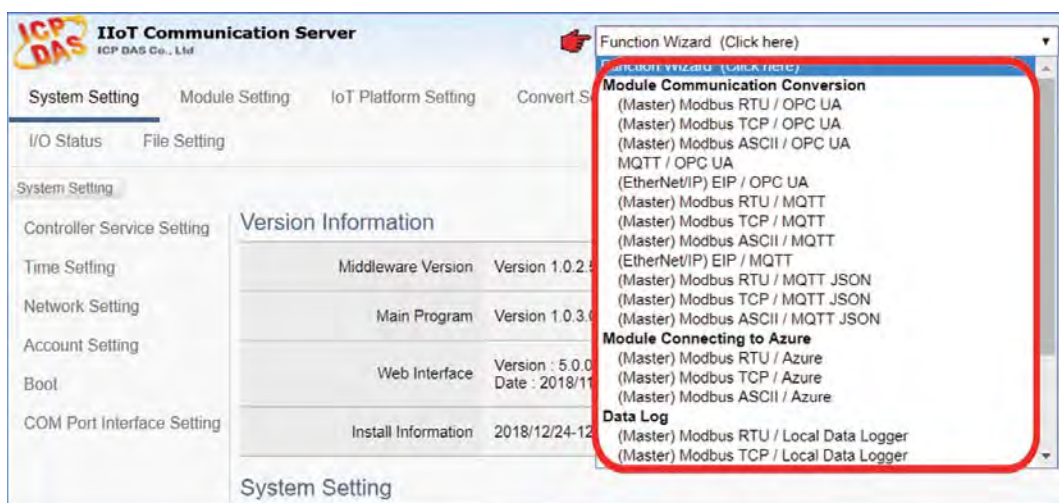
Support Cloud Platforms Connection

UA can actively connect to Amazon AWS, Microsoft Azure, IBM Bluemix, or Baidu... IoT platforms to send over the I/O data.



Provide Function Wizard Web UI for easily step-by-step setup

The Web UI of UA provides a wizard-like “Step Box” in the Function Wizard area to guide user step by step to complete the project or function. It provides many items for setting the Communication Conversion, Azure Connecting, Local Data Logger, Remote Database, Function Configuration, PID Operation, Condition Trigger the APP Message Notification (Line, Twitter) and will be more. It will help users to set projects easily and quickly.



Module Setting > Azure Setting > Apply Connection & Enable Converting Module > Save Project > Run the project

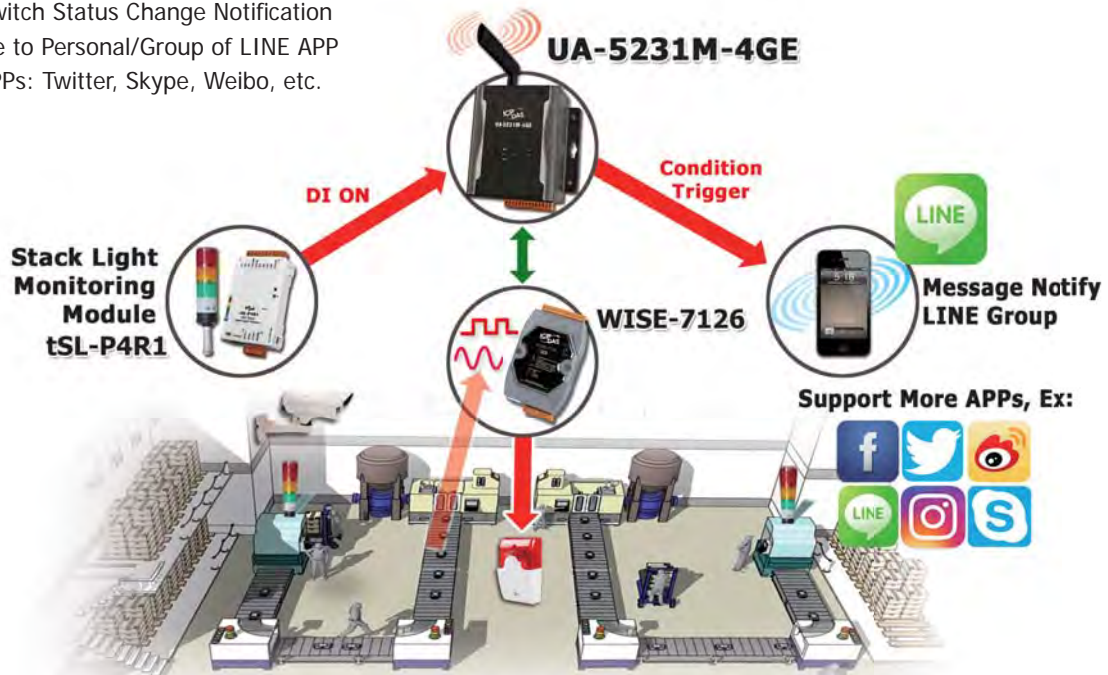
Applications:

■ Alert Message Notify LINE Group Application

This security application provides active and non-active signal triggers for buildings, factories, etc. Through the IFTTT platform, it can send the message notification to the user-favorite APPs and instantly master the device information.

Application Features:

- DI or Switch Status Change Notification
- Message to Personal/Group of LINE APP
- More APPs: Twitter, Skype, Weibo, etc.



■ CO2 Concentration Monitoring & Notification Application

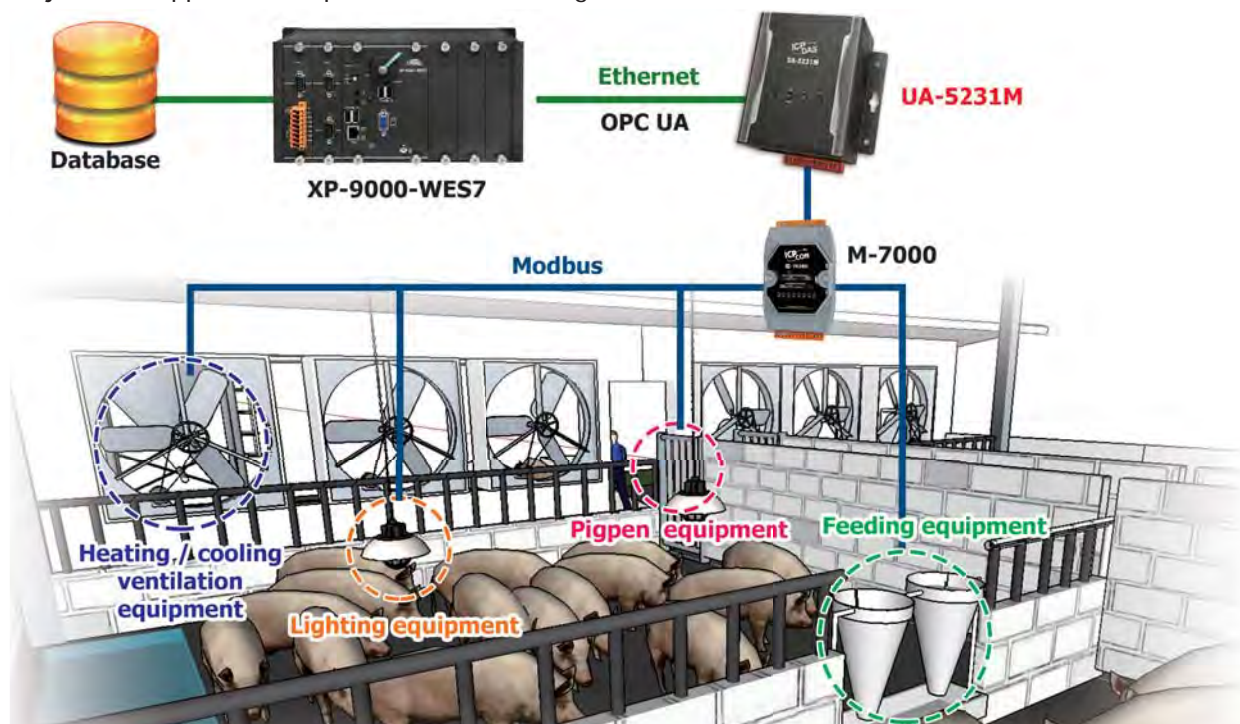
This application for indoor air quality management combines with LED displays, fresh air equipment, etc. When the CO2 concentration exceeds the limit, the system will display information on the LED display, force to ventilation, and sends notifications via IFTTT platform to pre-assigned web software, such as Gmail, e-mail, Office 365 Mail, etc.

Application Features:

- Dead Band Boundary Trigger
 - High: Danger Alert
 - Low: Safety Notification
- PC/Mobile Mail Notification
 - Gmail
 - e-mail
 - Office 365 Mail
 - Dropbox



The farm automation solution controls the on-site cooling/heating/ventilation environmental equipment, lighting equipment, feeding equipment, and pigpen equipment through UA-5231M and the connected M-7000 modules. The upper controller XP-9000 manages daily feeding and drinking equipment of every pigpen and integrates the data of the water supply, feed volume and diet to the database, and then analyzes the data and adjusts the application to plan the best breeding solution.

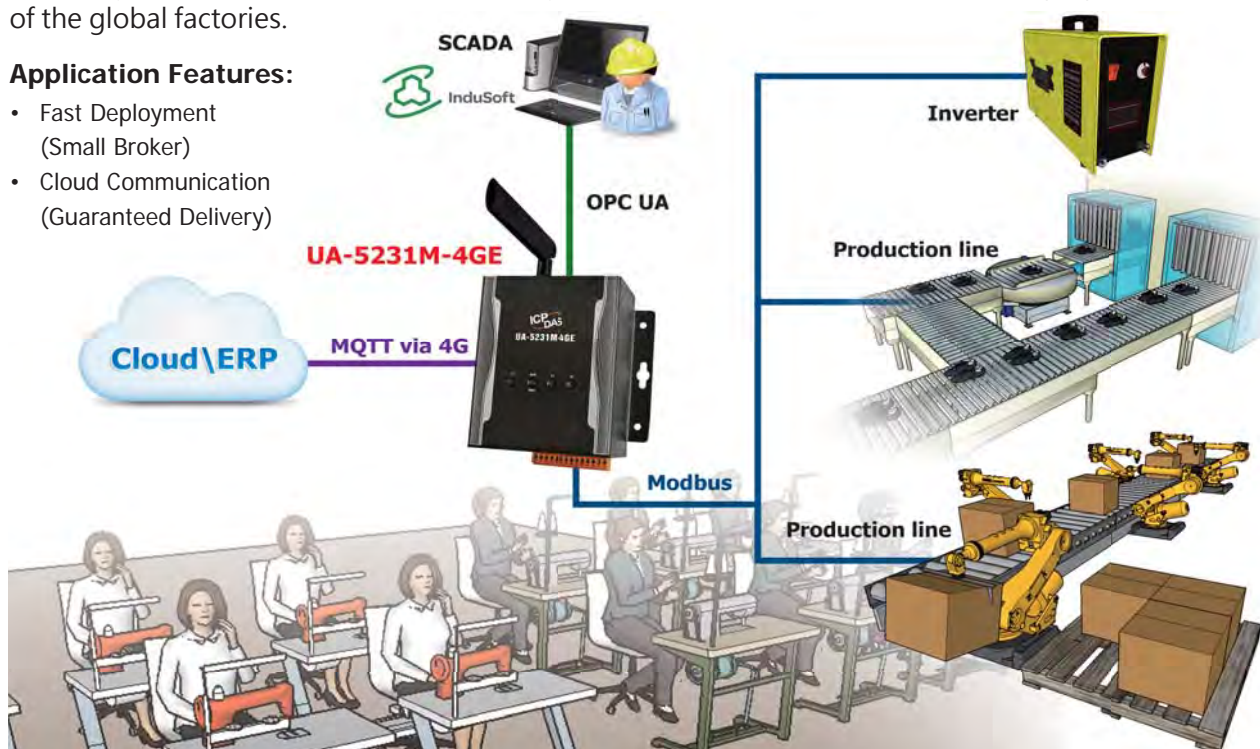


Factory Automatic Solution

The factory automatic solution uses the UA controller to obtain the information such as the safety status of the production line and the temperature, voltage and current status of the inverter, then transmits them to the SCADA control system for real-time factory management. Besides, the 4G wireless can help to integrate the machine status, temperature, product yield, production parameters, electricity consumption, etc. into the ERP system via the MQTT protocol for managing the production of the global factories.

Application Features:

- Fast Deployment
(Small Broker)
- Cloud Communication
(Guaranteed Delivery)



■ IIoT Factory Application of MES

The Manufacturing Execution System (MES) communicates the factory equipment via OPC UA Client, and the OPC UA Service of the UA-5200 series can seamlessly integrate the system and equipment. The MES is the main solution for today's factory system, and the UA-5200 series IIoT Communication Server is the best choice for the IIoT factory solution.

Application Features:

- Convenient for System Integration
- Unified Access Interface



■ Pumping Station IoT Application

This application is mainly about how to manage the pumping device data from stations. UA-5231 series uploads the data of all pumping stations to the control center and manages/configures with the IWS software. In this case, the UA-5231 shortens the configuring and adjusting time. Without the complicated PC configuration, the UA-5231 directly connect the Modbus and OPC UA Server by completing all configuration easily and efficiently on the web.

Application Features:

- Cross Web Domain
- Security

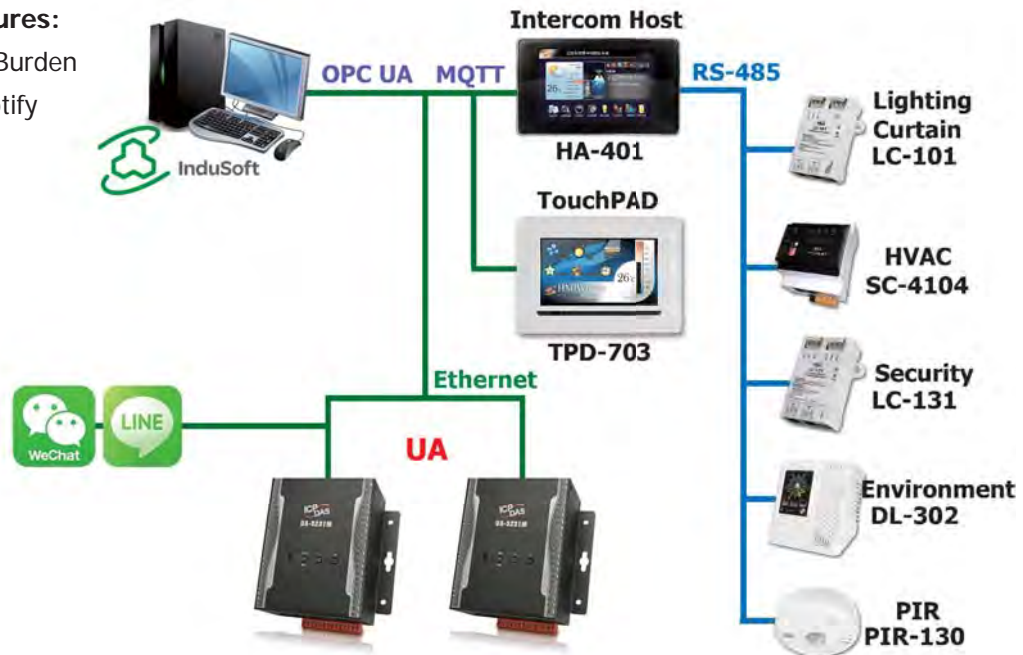


■ BA Smart Building IoT Application

This IoT application mainly combines the video intercom indoor host HA-401 with the lighting control, air conditioning, security, temperature, humidity, PM2.5, CH4, HCHO, and other harmful substance sense devices to create a safe and comfortable environment. When there is a special situation happens, UA can quickly trigger the event, send a notify to the Web App (ex: LINE, Weibo, Twitter, etc.). The dual UA architecture can reduce the system burden.

Application Features:

- Reduce System Burden
- APP Message Notify

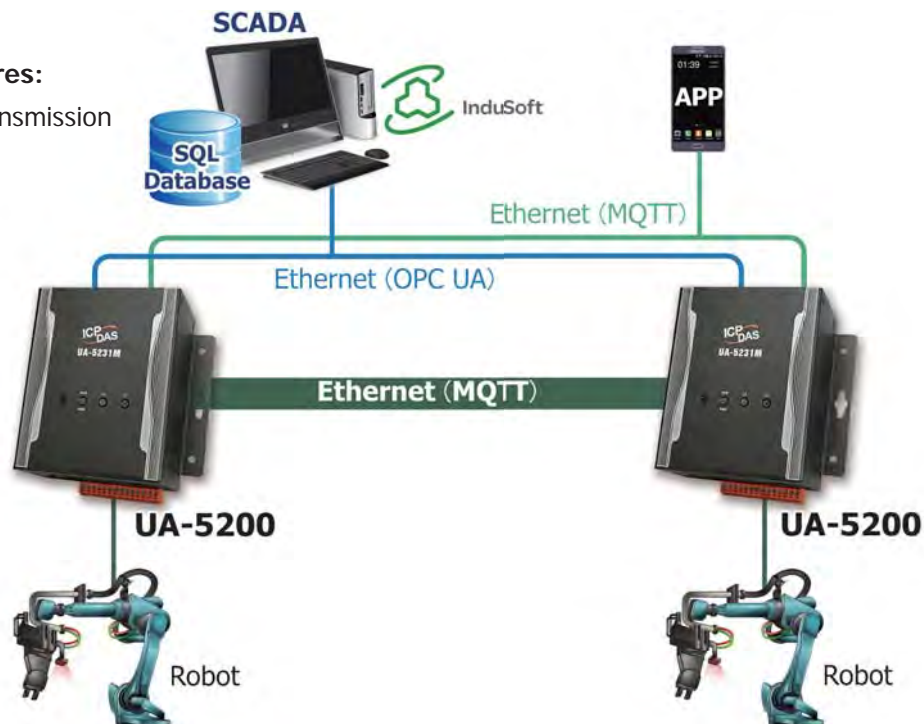


■ Robotic Arm Co-operation Application

This application allows two robotic arms interactive communication and coordinated operation through the MQTT, and do the data analysis and system monitor/control with the database of SQL, Big Data or SCADA through the OPC UA.

Application Features:

- Asynchronous Transmission
- Mobile Monitoring



Solutions:

1

(Modbus \leftrightarrow OPC UA)



2

(Modbus \leftrightarrow MQTT)



3

(MQTT \leftrightarrow OPC UA)



4

(MQTT \leftrightarrow MQTT)



5

(I/O Event → Comm. APP)



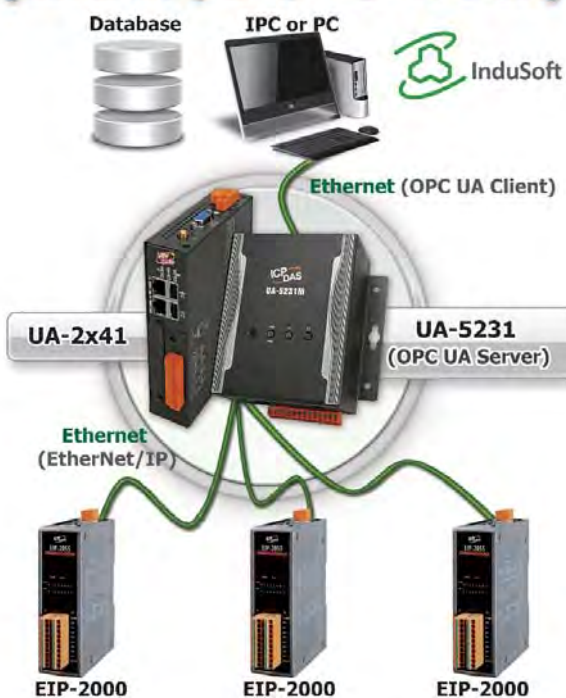
6

(I/O Event → Mail)



7

(EtherNet/IP ↔ OPC UA)



8

(EtherNet/IP ↔ MQTT)



UA I/O Module: U-7000 Series



U-75xxM

Features:

- Built-in Web Server to Provide the Web User Interface
- Support OPC UA Server and MQTT Client Protocol
- Support to Execute OPC UA and MQTT Communication Simultaneously
- AI/O Module Support Scaling Function
- Built-in I/O Channels (AI, AO, DI and/or DO)
- 2-port Ethernet Switch for Daisy-Chain Topology
- IEEE 802.3af-compliant Power over Ethernet (PoE)

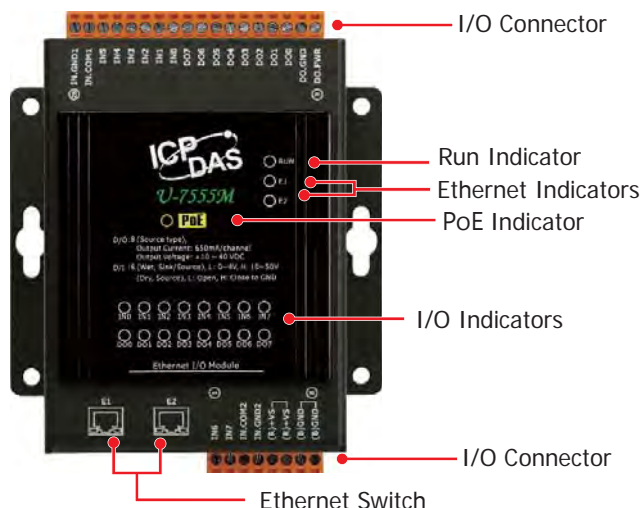
Intrudocion

UA I/O Module is a series of Ethernet I/O modules with built-in OPC UA Server and MQTT Client. It provides a web interface for configuring the module, controlling the output channels, monitoring the connection and I/O status. In industrial communication, UA I/O provides OPC UA Server and MQTT Client protocols (can execute both communications at the same time). Users can choose the networking mode according to their cases. And to transmit the values of the built-in I/O channels to the Cloud IT system or field control system for reading and writing. Support Scaling to convert the analog signal into a more readable value.

Comparison: ICP DAS UA I/O Module & Traditional I/O Module

	ICP DAS UA I/O Module		Traditional I/O Module
Protocol	OPC UA Server	MQTT Client	Modbus TCP Slave
IP Setting	Static IP	Static or Dynamic(DHCP) IP	Static IP
Identity Authentication	Account ID/Password, Anonymous, Certificate Verification	Account ID/Password, Anonymous	None
Encryption	SSL/TLS	SSL/TLS	None
Data Transmission	Active (Actively sends Data to the Client)	Active (Actively publishes Data to Broker, and the Broker sends Data to other Clients)	Passive (Wait for Master to poll the Data: Query/Response)
Project Building	Via browse the Server Content	Via subscribe Topic from Broker	Manually assign an ID and define the Data address and type.

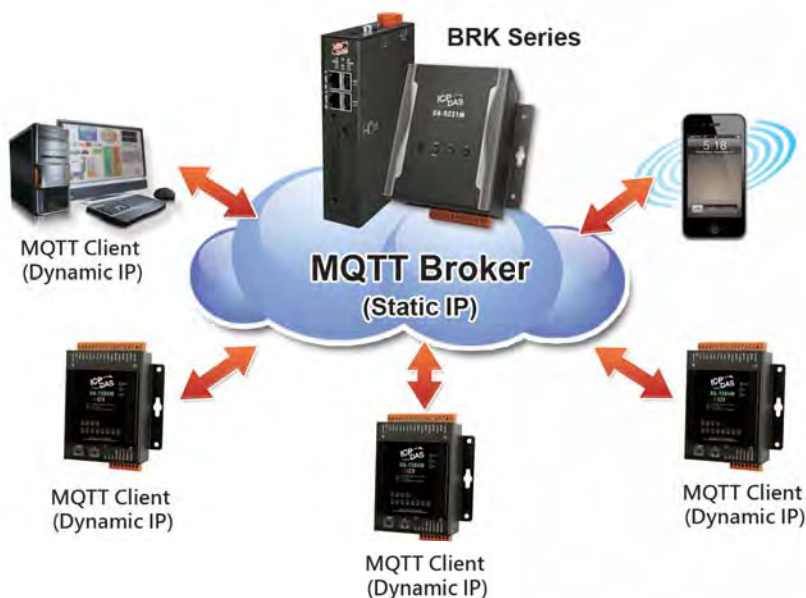
Appearance



OPC UA Architecture:



MQTT Architecture:



Selection Guide:

Module Name	AI		AO		DI		DO	
	Ch.	Type	Ch.	Type	Ch.	Type	Ch.	Type
U-7555M	-	-	-	-	8	Dry (Source), Wet (Sink,Source)	8	Open Collector (Sink)
U-7560M	-	-	-	-	6	Wet (Sink/Source)	6	Power Relay Form A (SPST N.O.)
U-7504M	4	±500mV, ±1V, ±5V, ±10V, 0~20mA, ±20mA, 4~20mA	4	0~5V, ±5V, 0~10V, ±10V, 0~20mA, 4~20mA	4	Dry (Source), Wet (Sink)	-	-
U-7526M	6	±500 mV, ±1V, ±5V, ±10V, 0~20mA, ±20mA, 4~20mA	2	0~5V, ±5V, 0~10V, ±10V, 0~20mA, 4~20mA	2	Dry (Source), Wet (Sink,Source)	2	Open Collector
U-7517M-10	10 / 20	±150mV, ±500mV, ±1V, ±5V, ±10V, ±20mA, 0~20mA, 4~20mA	-	-	-	-	-	-
U-7519ZM	8	±150mV, ±500mV, ±1V, ±5V, ±10V, ±20mA, 0~20mA, 4~20mA Thermocouple: J, K, T, E, R, S, B, N, C, L, M, LDIN43710	-	-	-	-	3	Open Collector (Sink)

IIoT MQTT Concentrator: BRK Series



BRK-2841M

Features:

- MQTT Broker Inside:
 - Bridge Function
 - Cluster Function
 - QoS Message Quality Mechanism
 - Retains Mechanism
 - Identity/Password Authentication
 - Communication Encryption
 - Last Message (Last Will)
- Support Load Balancer Function
- Support High Availability Architecture

Introduction

BRK Series is an embedded controller that specially provides Broker function of MQTT protocol for MQTT message distribution and concentrator in M2M and Industrial Internet of Things environments. The BRK Series is compatible with the MQTT version V.3.1, V.3.1.1 and V.5.0 protocol. It supports many functions such as QoS message quality mechanism, retains mechanism, identity authentication, communication encryption, last message (Last Will), and bridge. And support Web UI setting method to quickly set up BRK functions. It can reduce the burden of setting up the server by user oneself and reduce the maintenance cost. Besides, BRK Series provides Bridge, Cluster, Load Balancer, and High Availability functions. Composing multiple BRK Series to form a better Redundancy system can prevent field systems from stopping services due to hardware or network failures.

Advantages/Features

■ Provide Bridge and Cluster functions, which allows excellent scalability

The Bridge and Cluster can expand the service limit and data sources for MQTT Broker application:

- Bridge function - allows the BRK series to forward/subscribe the messages to other BRK series or third-party MQTT Brokers. By forwarding, it can divert the message to other BRK series service side. By subscribing to the remote brokers, it can increase the data sources.
- Cluster function - allows BRK series in the same group to share data to others with lower resources. When the number of connections and messages exceeds the limit of a BRK, using the cluster function can increase the number of connections to meet the needs.

■ Support Load Balancer function, which can effectively configure tasks and optimize MQTT communication

BRK series can use the Load Balancer function with MQTT Bridge or Cluster function. Set one BRK as the Load Balancer to provide a fixed IP and port for all Clients to connect. It can effectively configure MQTT communication services to other BRK devices in the group. This setting can maximize overall system communication capabilities and simplify user settings. And more, when one or a few BRK devices in the group fail, it can re-configure the services to other BRK devices to continue communication.

■ Support High Availability architecture, which can build up Redundancy system

Using two BRK devices at the same site can set each other as Redundancy. When the BRK device that is providing services fails or goes offline, the other BRK device can detect and take over in a short time, ensuring that the service will not be interrupted for a long time.

Selection Guide

Model		BRK-2841M
Hardware		
CPU		ARM Quad Core CPU 1.6 GHZ
RAM		1 GB
Software		
MQTT Client Connection Numbers		Max. 3000
MQTT Broker	Basic Features	
	Bridge Function	Support
	Cluster Function	Support
	QoS (Quality of Service)	Support QoS0, QoS1, QoS2
	MQTT Protocol	Support V3.1 / V3.1.1 / V5.0
	Retained Message	Support
	Last Will Message	Support
	System Topic(\$SYS/#)	Support
	Delay Publish	Available Soon
	Topic Alias	Available Soon
	Supported Protocol	
	TCP/SSL	Support
	Websocket (SSL)	Available Soon
	STOMP	Available Soon
	MQTT-SN	Available Soon
	CoAP	Available Soon
	LwM2M	Available Soon
	Identity Authentication	
	Client ID	Support
	User Account & Password	Support
	IP Address	Support
Load Balancer Function		Support
High Availability Architecture		Support

Applications:

■ BRK-2841M Bridge Architecture Application

Many corporations have large factories, ex: manufacturing, and some areas (ex: confidential data areas or clean rooms) require access control, which causes inconvenience in entering and exiting that takes longer when need troubleshoot. The corporations often take remote control systems to solve the problem. However, the remote control will expose the devices to the external network environment. As long as any device in the system has a data security vulnerability, the entire system may be attacked or even paralyzed. ICP DAS provides BRK-2841M MQTT Bridge Architecture. Through the MQTT Bridge mechanism, only the Topics and permissions that are authorized to be transmitted will send to the Remote Broker in the Bridge Architecture. And the built-in MQTT connection authentication methods such as Account/Password, Client ID, Certificates, etc., to increase the security of the communication to protect data. When doing the remote control, the operations are only to the Remote Broker. The equipment network in the factory can separate from the external network. If the external network communication is abnormal, the internal factory system can still operate without external influence.

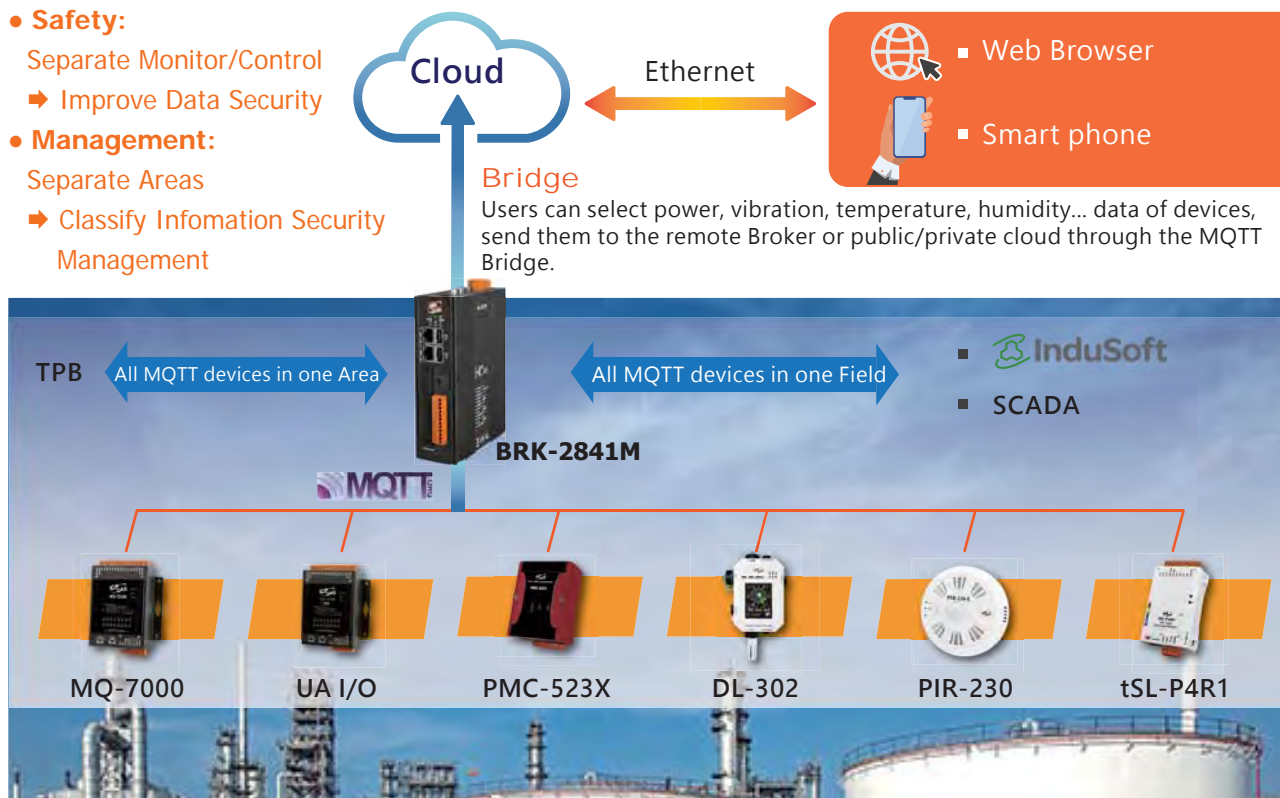
Why Choose MQTT Bridge?

• Safety:

- Separate Monitor/Control
- ➔ Improve Data Security

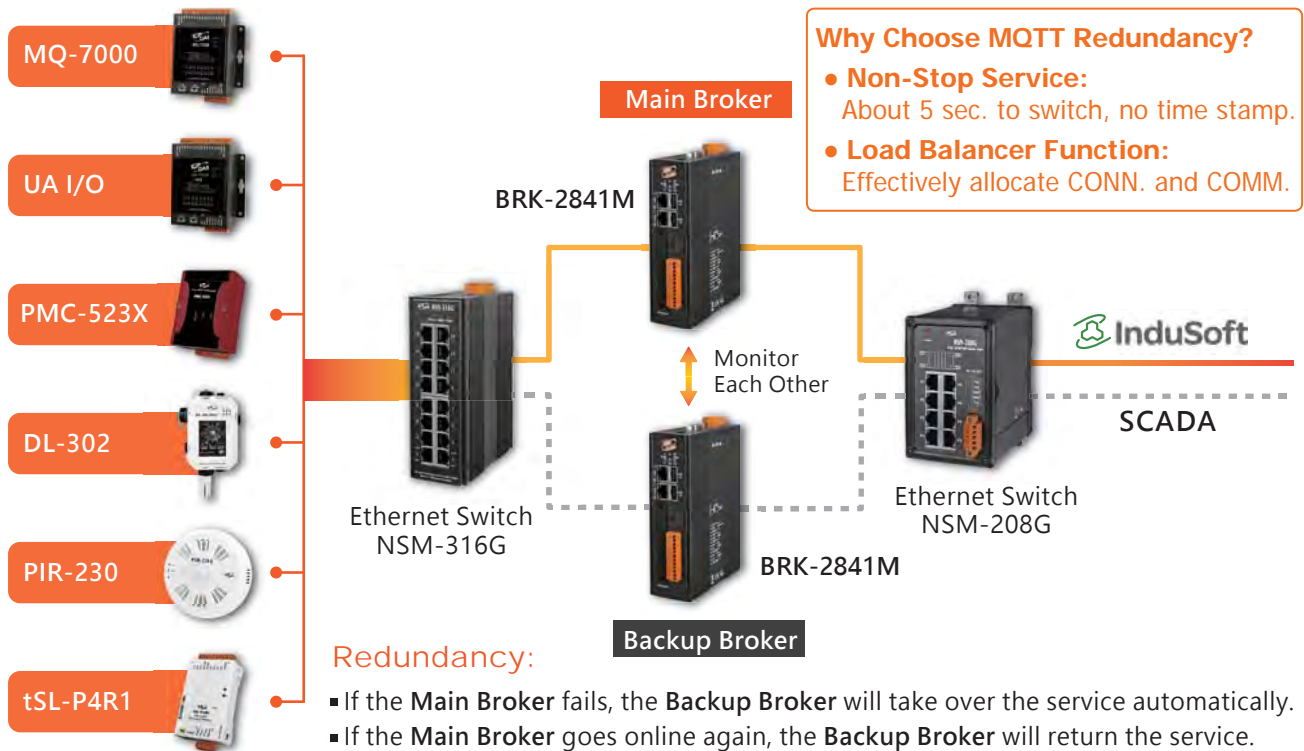
• Management:

- Separate Areas
- ➔ Classify Information Security Management



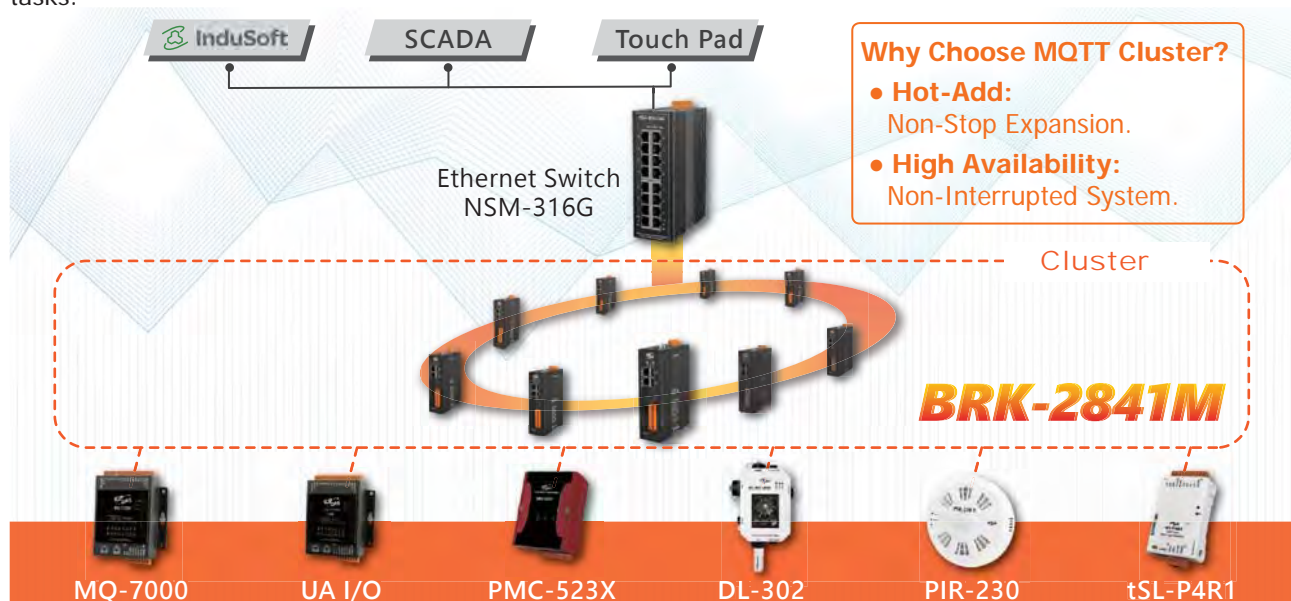
■ BRK-2841M Redundancy Architecture Application

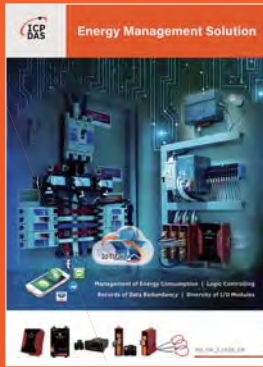
With the development of the Internet of Things, more companies widely use Machine-to-Machine communication to track on-site producing processes, machine operating conditions, report errors, and issue service alerts in real-time. Under the needs, how to protect data from natural disasters and man disasters that damage the system or data has always been the main topic. ICP DAS provides the BRK Redundancy Architecture for a solution that uses two BRK-2841M, one BRK-2841M (Main Broker) provides the MQTT services, and the other is used as a standby backup (Backup Broker) monitor the Main Broker at any time. Once the Main Broker is abnormal (such as shutdown without warning), the standby Backup Broker will take over in time. The MQTT service will not be interrupted, the system manager will have more time to deal with the problem, and the entire system will continue work.



■ BRK-2841M Cluster Architecture Application

The manufacturing industry often deploys sensors to collect the machine status of the production process, parameters, etc. to improve production efficiency, control quality, and reduce the production line shut down due to equipment failure. The sensors send these data to the control center to perform calculations and visualization so that the on-site person can instantly get the status of the production process. However, during the data collection process, the control center may not get the field devices data due to the failure of the network traffic. To solve this problem, ICP DAS provides the BRK-2841M Cluster Architecture that uses two and more BRK-2841M to form a High Availability Cluster. The BRK devices in the Cluster share to do the MQTT services. Since the BRK devices in the Cluster can complete the same tasks, if one BRK fails, other BRK devices can continue to work, thus ensuring the nonstop of MQTT services. BRK-2841M has a built-in Load Balancer function, which allows connection services to be equally distributed in the Cluster, making full use of the processing capabilities of each Broker in the Cluster and improving the processing efficiency of tasks.





Energy Management Solution

- InduSoft SCADA Software
- Smart Power Meter Concentrator
- Smart Power Meter
- True RMS Input Module
- TouchPAD Devices - VPD Series



IIoT Product

- IoTstar : cloud management software
- UA-5200 : communication server
- WISE series : IIoT host
- iCAM series : IP camera
- MQ-7200M series : MQTT I/O module
- Sensors : temperature, humidity, CO2, PM2.5,...



Industrial Fieldbus

- RS-485
- Industrial Ethernet
- Profinet
- CAN bus
- CANopen
- Devicenet
- J1939
- PROFIBUS
- HART
- Ethernet/IP
- BACnet



Wireless Solution

- Built-in OPC UA Server Service
- Built-in MQTT Broker Service
- Support Logic Control IFTTT
- Support IoT Cloud Platforms Connection and IoTstar Cloud Management
- IIoT Factory Application of MES
- Pumping Station IoT Application
- BA Smart Building IoT Application
- Robotic Arm Co-operation Application



Machine Automation

- Motionnet Solutions
- EtherCAT Motion Control Solutions
- Ethernet Motion Control Solutions
- Serial Communication Motion Control Solutions
- CANopen Motion Control Solutions
- PC-based Motion Control Cards
- PAC Solutions - Motion Modules



Smart Building, Smart Home Automation

- Video Intercom & Access Control
- Touch HMI - TouchPAD Series
- Smart Lighting Control
- Energy Saving - PM/PMC Series
- Environmental - DL/CL Series
- Motion Detector - PIR Series
- Wi-Fi Wireless - WF Series
- Infrared Wireless - IR Series
- ZigBee Wireless - ZT Series
- IIoT Server & Concentrator
- LED Display - iKAN Series



TouchPAD HMI Solutions

- Introduction
- TPD/VPD Products Series
- Video Intercom & Access Control Series
- TPD/VPD Application



PC-based I/O Boards

- PCI Express Bus Data Acquisition Boards
- PCI Bus Data Acquisition Boards
- ISA Bus Data Acquisition Boards

