



UA-2841M

UA Series IIoT Communication Server 2 Ethernet Ports

Features

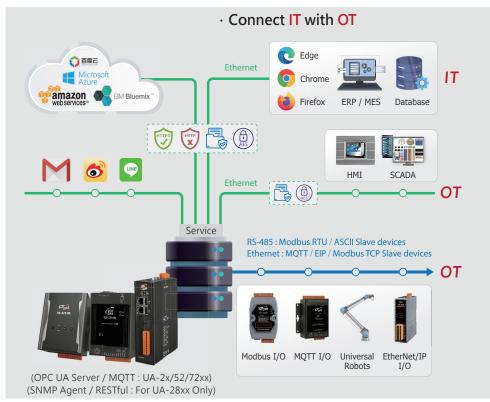
- Simultaneous Writing for Remote Database and Local Data Logger
- Offline Data Recovery Mechanism for Remote Database
- Support to Enable OPC UA, MQTT, SNMP and RESTful at the Same Time
- MQTT Broker (Including WebSocket)
- Support a Complete Information Protection Mechanism -HTTPS, SNMP v3, Communication Encryption, Block List
- IoT Cloud Platform Connection -Microsoft Azure, Amazon Web Services, IBM Bluemix, Alibaba Cloud
- IFTTT Logic Control Triggers the APP Notification Function
- PID Logic Operation Function



Introduction

UA-2841M is an **IIoT** (Industrial IoT) **Communication Server** for integrating the system and devices of IT and OT. UA features the IIoT Gateway function that allows users to access the remote I/O modules and controllers via Modbus TCP/RTU/ASCII, MQTT, and EtherNet/IP communication protocols. IIoT gateway function can also convert these I/O data to OPC UA or MQTT protocols for the needs of connecting with the MES, ERP, SCADA and Cloud services. Besides, UA features the Data Logger function that allows users to write the I/O data directly into the remote database (MS SQL / MySQL / MariaDB), and save to the local file (.csv) as the historical records. UA supports Cloud platform that can connect to Amazon AWS, Microsoft Azure or other Cloud platforms to send over the I/O data; and support Cloud logic service platform "IFTTT" which can connect many web APPs that allows users to receive first-hand notification messages through the most commonly used mobile APPs when an event triggered. UA Series enhances the networking and interoperability between IT and OT. Through UA series, users can easily deploy for Industrial IoT.

System Architecture



Hardware Specifications

Model	UA-2841M
Main Unit	
CPU	ARM Quad-Core 1.6 GHz
System Memory	DDR4 SDRAM 2 GB
Storage	Flash 8 GB microSD socket with one 4 GB microSD card (support up to 32 GB microSDHC card or 2 TB microSDXC card) mini PCIe Socket, Solid-state drive (SSD) can be expanded by accessories
Non-Volatile Memory	FRAM 64 KB MRAM 128 KB
Real Time Clock	Provide second, minute, hour, date, day of week, month, year
Display	
Signal	VGA (Analog RGB), reserved
LED Indicators	
Status	1 x PWR (Power), 1 x RUN (Running), 3 x User Defined LEDs
I/O Expansion	
I/O Туре	Support 1 optional XV-board to expand I/O or RS-485 ports (*1)
COM Ports	
Console Port	RS-232 (RxD, TxD and GND); Non-isolated
COM 2	RS-232 (RxD, TxD and GND); Non-isolated
COM 3	RS-485 (Data+, Data-); 2500 VDC isolated
COM 4	RS-485 (Data+, Data-); 2500 VDC isolated
НМІ	
Rotary Switch	1 x 10 Position (0 ~ 9)
Ethernet	
Ports	2 x RJ-45, 10/100/1000 Based-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)
USB	
Connector	2 x 2.0 host
Power	
Input Range	+12 ~ +48 VDC
Consumption	10 W
Mechanical	
Casing	Metal
Dimensions (mm)	42 x 164 x 129 (W x L x H)
Installation	DIN-Rail Mounting
Environmental	
Operating Temperature	-25 ~ +75°C
Storage Temperature	-40 ~ +80°C
Humidity	10 ~ 90% RH (non-condensing)

*1. Refers to the **UA website <u>Supported List</u>** for the available **XV-board** and supported UA models.



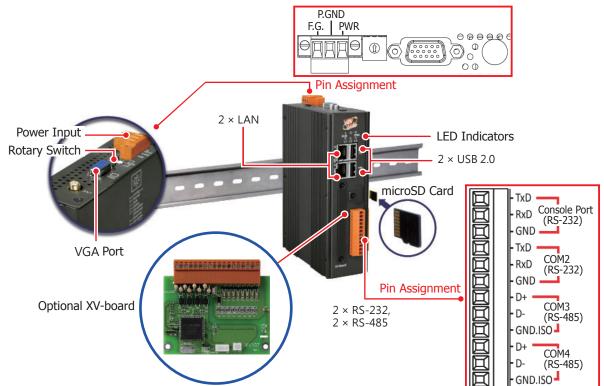
Software Specifications

Model	UA-2841M	
OS		
Linux	Linux Kernel 5.10.72	
Protocol (Note 1, Note 2)		
OPC UA Server	 OPC Unified Architecture: 1.02 Core Server Facet Data Access Server Facet Method Server Facet UA-TCP UA-SC UA Binary User Authentication: Username/Password, X.509 Certificate Security Policy: None Basic128Rsa15 (Sign / Sign & Encrypt) Basic256 (Sign / Sign & Encrypt) Basic256Sha256 (Sign / Sign & Encrypt) Aes128_Sha256_RsaOaep (Sign / Sign & Encrypt) Aes256_Sha256_RsaPss (Sign / Sign & Encrypt) Recommend to keep the maximum number of sessions within 50 connections. Max. 8000 Tags. 	
MQTT Broker	Support the MQTT v3.1.1 protocol, provide MQTT message transmission and distribution management, and support TLS(1.3)/SSL and Web Socket communications. Recommend to keep the connection number of Clients within 500. Max. 2100 Client Devices.(Note 1)	
MQTT Client	Connect the MQTT Broker to read/control the devices supporting the MQTT protocol. Or connect the MQTT Broker to externally read/control the devices supporting other protocols that link with the UA series (MQTT Ver. 3.1.1; TLS Ver. 1.3). Max. 500 Connections. (Note 1)	
Modbus TCP Master	To read or control the devices that support standard Modbus TCP Slave protocol. Recommend to keep the maximum number of devices within 250 connections.	
Modbus RTU/ASCII Master	A max. of 3 ports: COM2, COM3, COM4 to connect other Modbus RTU Slave devices (e.g. M-7000). Recommend no more than 32 devices per port (32*3 port) for better communication quality.	
EtherNet/IP Scanner	Support connect EIP-2000 series modules of ICP DAS. Recommend no more than 125 devices per UA.	
SNMP	Provide SNMP Agent service, for users to external access the devices connected with the UA through the SNMP communication. Max. 10 read commands and 10 write commands at the same time.	
RESTful	Provide RESTful API service, for users to external access the devices connected with the UA through the HTTP communication. Max. 20 read commands and 1 write command at the same time.	
Firewall		
Dynamic Blocklist	Set conditions to monitor the connection status of the service port. When the external IP connections exceed the condition setting value, the dynamic blocklist will automatically block the subsequent connection of the IP to avoid a large number of abnormal connections from blocking network services and protect system stability.	
Data Logger (Note 2)		
Local Data Logger	Record I/O data, and save to the local MicroSD card or SSD in CSV format.	
Remote Database	Record I/O data, and send to the remote database of MS SQL / MySQL / MariaDB. Recommend Max. 2 Databases per Time, Max. 1000 Tags per database connection.	
Function (Note 2)		
Internal Module	Can create virtual variables as an intermediary for reading, writing, or data exchange.	
PID Function	Combine the remote I/O devices for the PID logic control system.	
IoT Service Integration (Note 2)		
Microsoft Azure	MQTT Service can connect to MS Azure IoT Hub for Cloud platform service.	
Amazon Web Services	MQTT Service can connect to AWS IoT Core for Cloud platform service.	
IBM Bluemix	MQTT Service can connect to IBM Bluemix for Cloud platform service.	
IFTTT	Support Logic event sending to IFTTT Web platform. IFTTT Logic Trigger APP (Line, Twitter, Gmail)	
lete 1. The specifications in	n the table are the maximum number of connections or usage when using a single Protocol.	

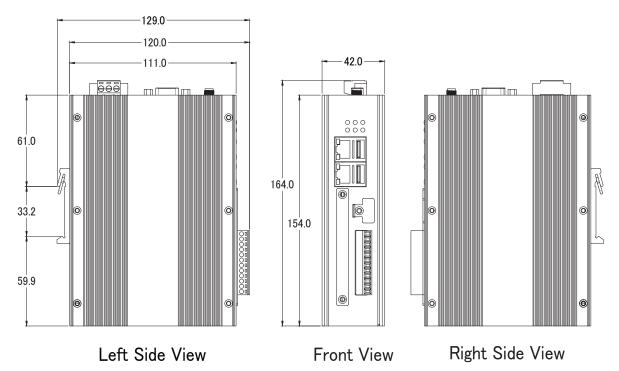
Note 1: The specifications in the table are the maximum number of connections or usage when using a single Protocol.

Note 2: When using multiple Protocol functions, the user needs to control the device number to under 80% of the CPU usage. Please refer to the CPU Usage of the UA Web UI.

Appearance/Pin Assignment



Dimensions (Units: mm)



Ordering Information

Option Accessories

I/O Expansion XV-board	XV107, XV107A, XV110, XV111, XV111A, XV116, XV119, XV303, XV306, XV307, XV310
RS-485 Expansion XV-board	XV511i