BRK-2841M

BRK Series IIoT MQTT Communication Server

Quad-core ARM CPU and 2 Ethernet Ports

Features
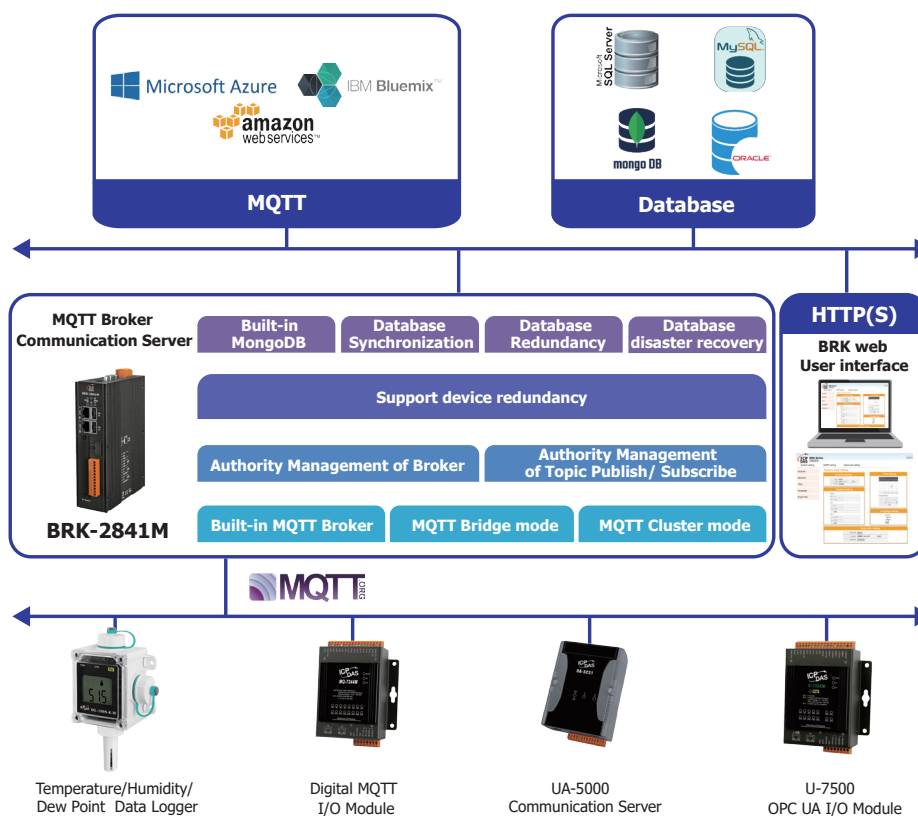
- Built-in database (MongoDB)
- Communication Redundancy Architecture – rapid setup
- Information Security Protection – Multiple Mechanism
  - ☐ HTTPS
  - ☐ Management of Broker permissions
  - ☐ Management of Topic Publish/Subscribe
- MQTT Broker – Bridge and Cluster
  - ☐ Bridge Function
  - ☐ Cluster Function
  - ☐ QoS Message Quality Mechanism
  - ☐ Retains Mechanism
  - ☐ Last Message (Last Will)

Introduction

BRK Series is an Communication Server 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.
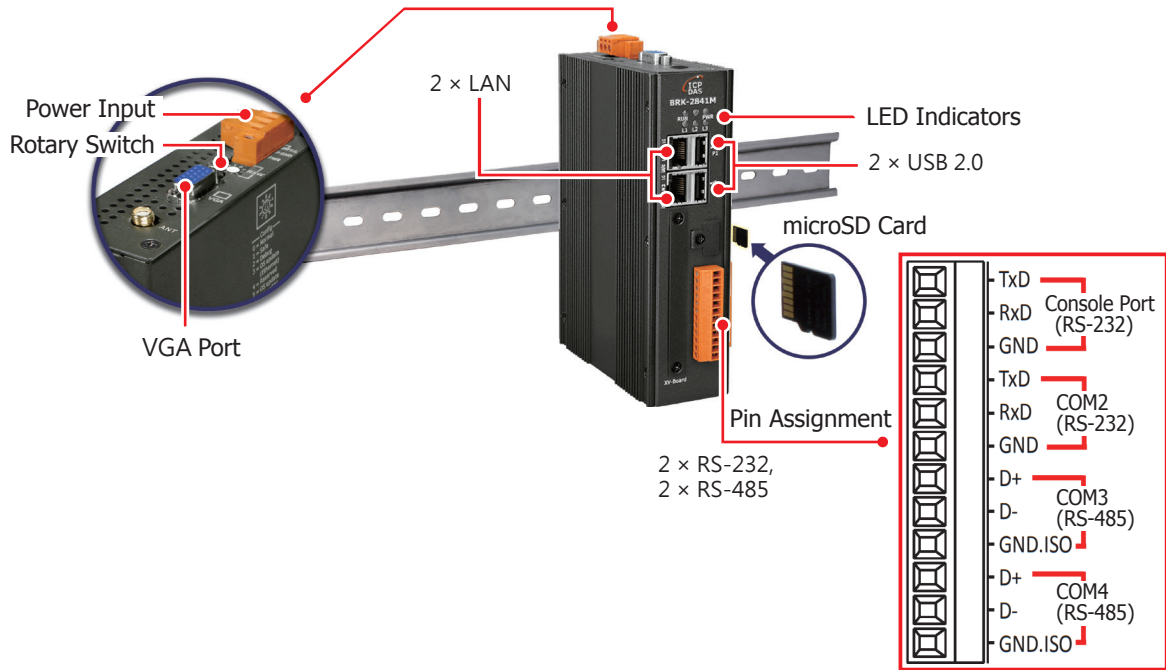
System Architecture

Temperature/Humidity/ Dew Point Data Logger

Digital MQTT I/O Module

UA-5000 Communication Server

U-7500 OPC UA I/O Module

■ Hardware Specifications

Model	BRK-2841M
Main Unit	
CPU	Quad-core ARM CPU, 1.6 GHz/Core
System Memory	DDR3 SDRAM 2 GB
Storage	Flash 8 GB
Non-Volatile Memory	FRAM 64 KB, MRAM 128 KB
Ethernet	
Ports	RJ-45 x 2, 10/100/1000 Base-TX (Auto-negotiating, Auto MDI/MDI-X)
Power	
Input Range	+12 ~ +48 VDC
Consumption	4.8 W
Environmental	
Operating Temperature	-25 ~ +75 ° C
Storage Temperature	-40 ~ +80 ° C
Humidity	10 ~ 90% RH,Non-condensing

■ Software Specifications

Model		BRK-2841M
Function		
Built-in database	Support MongoDB	Data can be recorded directly into the built-in database, additional database setup is not required.
	Data Redundancy	Two or more BRK-2841Ms consist of a redundancy group in which all databases are synchronized to achieve data redundancy.
	Database Failover	BRK-2841Ms in the same redundancy group will monitor each other to see if they are functioning properly, and in case of failure, the rest of the devices will take over to ensure that the database recording is not interrupted.
	Writing Speed	20 times/second
Communication Redundancy Architecture – rapid setup	Redundancy System	Two or more BRK-2841M consist of a redundant group, all the devices in the group monitor each other, and when the host that mainly provides MQTT service fails, the redundant device will take over and continue to provide MQTT service to achieve Broker redundancy.
Information Security Protection – Multiple Mechanism	HTTPS	The built-in web server supports HTTPS to ensure secure communication between the server and the browser.
	Authority Management of Broker	Allow/prohibit connection requests to the Broker from specific IP addresses, Client IDs, or Broker users, and perform the first stage of filtering from the connection to improve the stability and security of the Broker.
	Management of Topic Publish/Subscribe	Allow/prohibit publish/subscribe to Topics, to normalize the publish/subscribe privileges of Topics by Clients who have passed the first stage of filtering, and to prevent important Topics from being modified with or read by others.
MQTT Broker – Bridge and Cluster	Max. Number of Clients	100000 connections
	Max. Number of Topics	100000 records
	Support MQTT Bridge	In Bridge mode, you can transfer data between multiple Brokers. ·Transfer data to specific Brokers according to predefined rules. ·Subscribe to specific Topics on the Bridge node and transfer or forward them to local or remote Brokers after receiving the data.
	Support MQTT Cluster	In Cluster Mode, two or more BRK-2841Ms work together to ensure the consistency and availability of MQTT services, which is very important for enterprises that cannot afford downtime.

■ Appearance

Power Input

Rotary Switch

VGA Port

2 × LAN

LED Indicators

2 × USB 2.0

microSD Card

Pin Assignment

2 × RS-232,
2 × RS-485

TxD
RxD   Console Port
GND   (RS-232)

TxD
RxD   COM2
GND   (RS-232)

D+
D-   COM3
GND.ISO (RS-485)

D+
D-   COM4
GND.ISO (RS-485)

■ Dimensions (Units: mm)

130.0
120.0
111.0

61.0
33.2
59.9

42.0

164.0
154.0

Left Side View

Front View

Right Side View
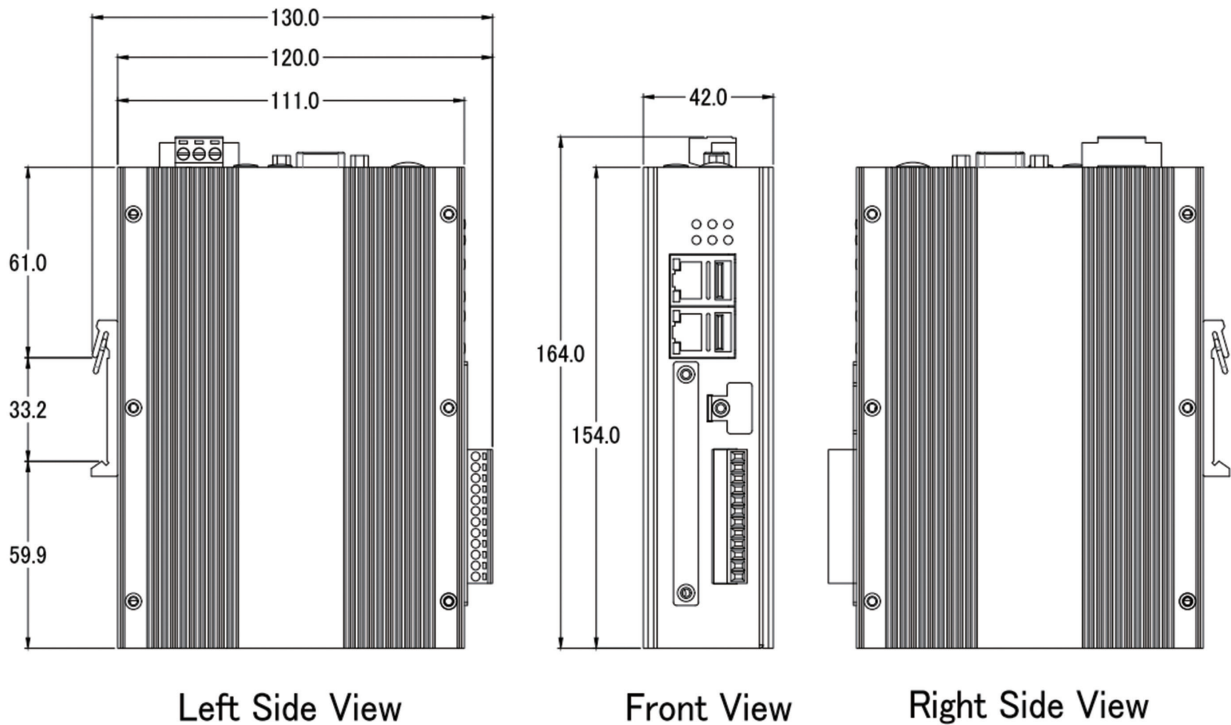
■ Ordering Information

BRK-2841M CR	IIoT MQTT Communication Server (Metal), with Quad-core ARM CPU and 2 Ethernet Ports(RoHS)