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IOT-BMC410 Technical Specifications

1. Introduction

IOT-BMC410 is an IoT wireless data terminal 4G product that uses public cellular network to provide users with wireless long-range secure and reliable data transmission function.

The product adopts high-performance industrial-grade wireless module and provides both SPI and RS485 interfaces to realize wireless data communication between field devices and the central cloud server, and easily complete remote data acquisition and control of field devices; the product adopts embedded design, featuring compact size, easy installation, low power consumption and stable performance.

This product has been widely used in M2M industries in the IoT industry chain, such as smart buildings, photovoltaics, air compressors, smart grids, smart transportation, supply chain automation, industrial automation, environmental protection, telemetry, space exploration, agriculture, forestry , water affairs, coal mines, petroleum and petrochemical and other fields.

2. Network topology

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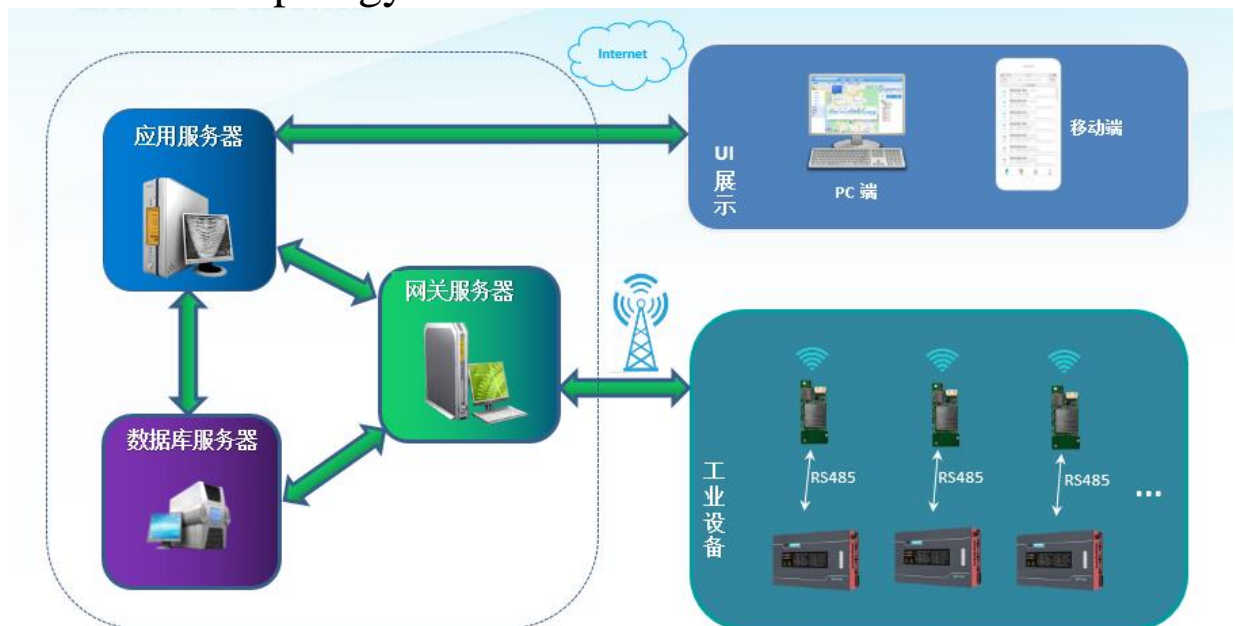
2. Product Features

Industrial Grade Application Design

➢ Adopt high-performance industrial grade wireless module；

➢ Low-power design to minimize power consumption；

➢ Industrial-grade protection grade design, suitable for industrial control field applications；

➢ Wide power input (DC 5~24V)；

Stable And Reliable

➢ The design adopts the soft self-check function to ensure the stability of the system；

➢ Adopt a complete anti-drop mechanism to ensure that the data terminal is always online；

➢ RS485 interface built-in 15KV ESD protection；

➢ SIM/UIM card interface with built-in 15KV ESD protection；

➢ Power interface built-in overcurrent protection；

➢ Lightning protection of antenna interface；

➢ Strong anti-interference ability, can maintain normal operation in harsh environment；

Standard and easy to use

➢ Adopt industrial terminal interface for various field applications in industry；

➢ Provides 1 standard RS485 and 1 SPI interface, which can be directly connected to serial devices；

➢ Provide powerful background center management software to facilitate device management；

➢ Intelligent terminal, easy to use, flexible, plug and play；

➢ Convenient system configuration and maintenance interface；

➢ Support local software upgrade and remote upgrade and maintenance；

Powerful

➢ Support UDP communication, use standard MODBUS protocol for communication with equipment；

➢ Support positioning function；

➢ Support SMS function；

➢ Support remote monitoring function；

➢ Support remote read and write control function；

➢ Support anti-disassembly function; (optional)

➢ Support fault active reporting function；

➢ Support AC drive firmware remote upgrade function；

➢ Support multiple device access function；

➢ Support data active reporting function；

➢ Support offline storage function; (optional)

➢ Support registration + heartbeat link detection mechanism；

➢ Support transparent transmission function；

➢ Support network connection status query；

3. Product Specifications

Wireless Parameters

Name	Content	
Working frequency	LTE FDD: B1,B3,B5,B8	
	LTE TDD: B34,B39,B40,B41 (2555Mhz-2655Mhz)	
	GSM/GPRS/EDGE: 900/1800MHz	
Transmission rate	LTE FDD Rel.13	10Mbps DL/5Mbps UL
	LTE TDD Rel.13	10Mbps DL/5Mbps UL
	GPRS	GPRS:85.6kbps DL/85.6kbps UL(multi-slot class 12)
transmit power	<23dBm	
Receive sensitivity	<-98.5dBm	

Interface type

Name	Content	
serial port	1 * RS485 interface, built-in 15KV ESD protection. The serial port parameters are as follows: Data bits: 5, 6, 7, 8 bits Stop bits: 1, 1.5, 2 bits Parity: no parity, even parity, odd parity Serial port rate: 9600~115200bits/s	
SPI	SPI master device, baud rate 1MHz SPI waveform timing: CPOL: low CPHA: 2 edge Voltage Domain: 3.3V	
indicator light	Red	Power Indicator
	Green	Network status indicator
Antenna interface	USS RF Gen I socket	
SIM/UIM card interface	Micro SIM card	
	USIM 3.0V/1.8V	
4G standard	All Netcom (Mobile, Unicom, Telecom)	
USB □	USB 2.0 x 1	
button	BOOT key	Module power-on operation mode selection
	RESET key	restart the module

Power supply

Name	Content
SPI terminal power supply	DC 5V
RS458 terminal power supply	DC 5~24V wide voltage input

Power consumption

| Name	Content
Peak power consumption	DC 5V supply Current 110mA Power consumption 550mW
Average power consumption	DC 5V power supply Current 52mA Power consumption 262mW

Physical Characteristics

Name	Content
Dimension	84x37 mm (excluding antenna and mountings)
Weight	Approx. 18.5g

Other parameters

Name	Content
Operating temperature	-20°C - 50°C
Storage temperature	-20°C - 60°C
Relative Humidity	93% (no condensation)

4. Application Interface

The IOT-BMC410 is the master station with two communication interfaces (SPI (3.3V voltage domain) and 485 communication) signals defined as follows:
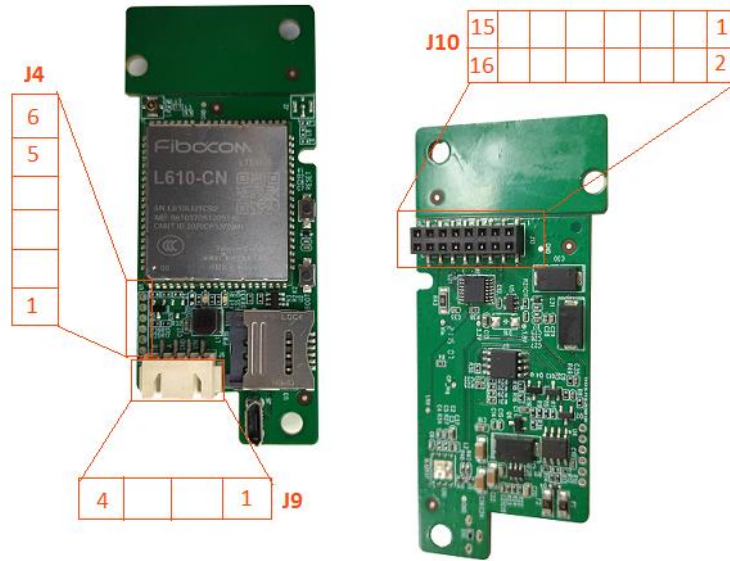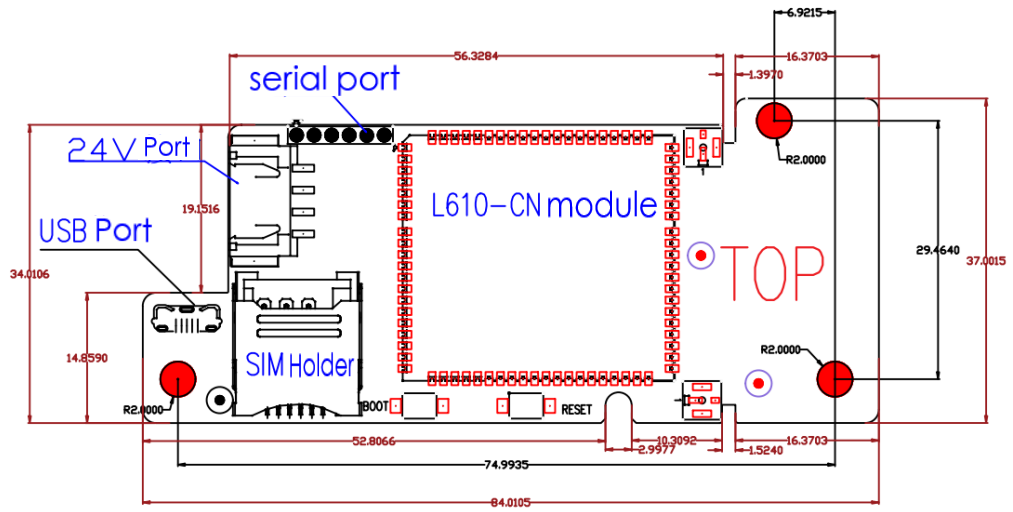

J9			
Bit	Definition	Bit	Definition
1	24V	3	A+
2	GND	4	B-

J4			
Bit	Definition	Bit	Definition
1	V1.8	4	DEBUG_UART_TXD
2	GND	5	UART1_RXD
3	DEBUG_UART_RXD	6	UART1_TXD

J10			
Bit	Definition	Bit	Definition
1	NC	9	NC
2	NC	10	NC
3	SPI_CLK	11	NC
4	SPI_MOSI	12	5V
5	GND	13	NC
6	GND	14	NC
7	SPI_STE	15	NC
8	SPI_MISO	16	NC

5. shape and size

Specification size

Physical picture