



### Key Features

- LoRa 850~931MHz, or 410-490MHz to choose
- 1-RS232, 1-RS485, half-duplex
- Low power, long-range up 10Km(open air)<sup>1</sup>
- Anti-interference, high receiving sensitivity
- AES Encryption and Decryption over the air communication
- Point-to-point, fixed-point transparent transmission mode
- Easy to configure, plug and play
- Wide operating temperature: -35~+75 ° C
- Power Input: 5-35VDC

### Introduction

The Bivocom TW820 LoRa modem is a scalable communication device designed for reliable, long-range and light data transmission using advanced technology. Engineered for various industrial and IoT applications, this modem excels in low-power consumption while maintaining high receiving sensitivity and strong anti-interference capabilities.

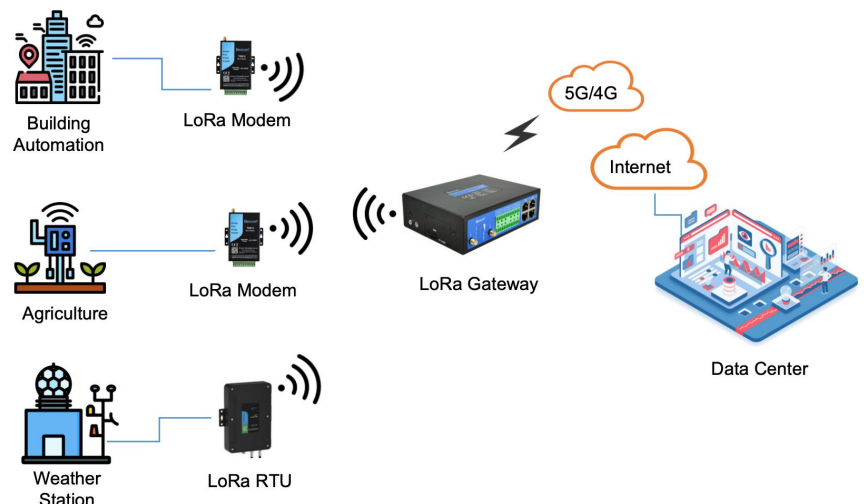
Equipped with versatile connectivity options including RS232 and RS485, the TW820 supports seamless integration into existing systems. Its robust AES encryption ensures secure over-the-air communication, protecting sensitive data from unauthorized access. The modem operates efficiently in both point-to-point and fixed-point transparent transmission modes, making configuration straightforward and user-friendly.

With a wide operating temperature range of -35 to +75 ° C and a flexible power input of 5-35VDC, the Bivocom TW820 is designed for durability and reliability in harsh environments. Whether you're building a smart city, monitoring remote assets, or deploying sensor networks, the TW820 provides a plug-and-play solution that meets your long-range communication needs.

### Applications

The LoRa technology is widely used in various IoT applications due to its long-range capabilities, low power consumption, and ability to handle a large number of devices.

- Smart Agriculture
- Smart Cities
- Asset Tracking
- Environmental Monitoring
- Smart Metering
- Connected Healthcare
- Flood and Weather Monitoring
- Industrial Automation



# Specifications

## LoRa Interface

● Frequency	850~931MHz, or 410-490MHz(Option) <sup>2</sup>
● Distance	Building: Up to 3KM Open air: Up to 10KM Up to -129dBm
● Sensitivity	21-30dBm
● TX Power	AES
● Encryption	1.2~62.5kbps (default: 4.8kbps)
● Air Data Rate	Up to 230 Bytes
● Single-packet Data Size	
● Channel	82 Channels
● Antenna Connector	1 × 50 Ω SMA Female

## Serial Interfaces

● Connector	Terminal block, 3.5 mm female socket
● Ports	1-CFG(Config Port), 1-RS232, 1-RS485
● Baud Rate	1200bps to 115200bps(default 9600bps)
● ESD protection	8KV for RS232, 15KV for RS485

## Power Supply and Consumption

● Connector	Terminal block, 3.5 mm female socket
● DC Input	5-35 VDC
● Standard Power	DC 12V/0.5A
● Idle Mode	5mA@12VDC
● Working Mode	85mA@12VDC

## Physical Characteristics

● Ingress Protection	IP30
● Housing & Weight	Metal, 218g(0.48lbs), without accessories
● Dimensions	91x58x22mm (3.58 x 2.28 x 0.87in)
● Mounting	Wall mount

## Environmental

● Operating Temperature	-35° C to +75° C (-31°F to +167°F)
● Storage Temperature	-40° C to +80° C (-40°F to +176°F)
● Relative Humidity	5% to 95% (non-condensing)

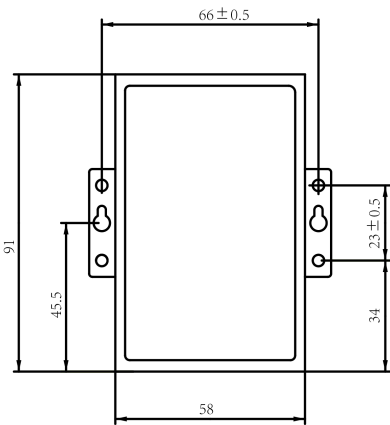
## Others

● LED Indicators	LoRa TX, LoRa RX, Power
● Approvals <sup>3</sup>	CE*, RCM*, FCC*
● Warranty Period <sup>4</sup>	Standard: 12 Months Extended: 2-5 Years

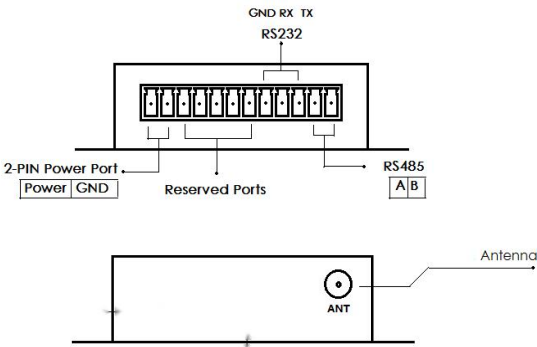
## Standard Package Content

1.	TW820 Modem	1 PCS
2.	Power Adapter(DC 12V/1.5A, EU/US/UK/AU plug optional)	1 PCS
3.	LoRa Antenna	1 PCS
4.	RS232 Cable (DB9 Female, 1 meter)	1 PCS
5.	8-Pin Terminal Block	1 PCS

## Dimensions(mm)



## Side Views



# Order Information

Model	Part Number	Description	Frequency Band <sup>5</sup>
TW820-LR	TW820- LR<1>	LoRa Modem, 1-RS232, 1-RS485	850~931MHz, or 410-490MHz to choose

<1>: LoRa module for different countries and regions

### Note:

- The distance is just theoretical value, it may vary due to factors like environmental conditions
- There are other frequency bands to choose
- \* Under progress
- Price of the extended warranty will be different.
- If you couldn't find the frequency band for your regions or have any questions, please contact Bivocom sales representatives for more information.
- To save the earth, Bivocom doesn't print the user guide, if you need it, please go to Bivocom website to [download](#).
- Icons are from Flaticon