X Series I/O Modules

1CH RS485 CH RS232 1CH CAN 2CH GPIO Module X8

BLIIOT®

MAKE IIOT EASIER

X8

User Manual

Version: V1.0

Date: 2025-7-4

Shenzhen Beilai Technology Co.,Ltd

Website: https://www.bliiot.com

Preface

Thanks for choosing BLIIOT X series I/O modules. These operating instructions contain all the information you need for operation of X series I/O modules.

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Disclaimer

This document is designed for assisting user to better understand the device. As the described device is under continuous improvement, this manual may be updated or revised from time to time without prior notice. Please follow the instructions in the manual. Any damages caused by wrong operation will be beyond warranty.

Revision History

Revision Date	Version	Description	Owner
2025/7/4	V1.0	Initial Release	PH

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1 Introduction

1.1 Overview

X8 is an industrial-grade expansion module specially designed for the ARMxy series ARM embedded computers. The module features overvoltage protection, fault protection, and overcurrent protection circuit designs to ensure stability and reliability in complex industrial environments.

1.2 Technical Specifications

Name	Parameter	Description
Power Supply	Operating Power	Internal Voltage
	Working Voltage	12V-24V
	Power Consumption	2W
RS485/RS232	Channel	1×RS232 + 1×RS485
	Maximum Baud Rate	RS232: 115kbps RS485: 10Mbps
	Data Bits	RS232: 5-bit, 6-bit, 7-bit, 8-bit (configurable) RS485: 5-bit, 6-bit, 7-bit, 8-bit (configurable)
	Stop Bits:	RS232: 1-bit, 2-bit (configurable) RS485: 1-bit, 2-bit (configurable)
	Parity	RS232: Odd parity, Even parity, No parity (configurable) RS485: Odd parity, Even parity, No parity (configurable)
	Flow Control	RS232: Not supported RS485: Not supported
	Impedance	RS232: Input impedance 300 Ω, Output impedance 3 kΩ RS485: 120 Ω
	Measured Distance and Operating Baud Rate	RS232: 15 meters (baud rate ≤ 1200 bps) RS485: 200 meters (baud rate ≤ 115200 bps)
	Supports Multi-Drop Communication	RS232: Not supported RS485: Requires custom development
	Communication Mode	RS232: Full-duplex / Half-duplex / Simplex RS485: Unidirectional Half-duplex / Simplex
	Data Transmission Mode	RS232: Transmit and receive mode, Receive-only mode, Transmit-only mode

		RS485: Transmit and receive mode, Receive-only mode, Transmit-only mode	
	Logic Level	RS232	Logic “1”: 1.5 V
			Logic “0”: 2.4 V
		RS485	Logic “1”: -3 V
			Logic “0”: +3 V
	Maximum Output Current per Channel	100mA (at 26℃)	
	Isolation Protection	2KVrms (built-in)	
	Communication Cable Requirements	Shielded twisted pair cable	
CAN	Channel	1 Channel	
	Transmission Mode	CAN BUS	
	Maximum Baud Rate	Nominal Bit Rate: 1000Kbps Data Bit Rate: 5000Kbps	
	Flow Control	Not supported	
	Impedance	45KΩ	
	Measured Distance and Operating Baud Rate	200 meters (baud rate = 500 Kbps)	
	Multi-Node Communication	Support	
	Logic Voltage	Logic "1": 3.5V Logic "0": 1.2V	
	Maximum Output Current per Channel	100mA (26℃)	
	Isolation Protection	2KVrms (built-in)	
	Communication Cable Requirements	Shielded twisted pair cable	
GPIO	Channel	2 Channels	
	Output Mode	Single-ended output	
	Output Voltage	High level: 3.3V Low level: 0.7V	
	Maximum Output Current per Channel	5mA	
	Input Withstand Voltage	Maximum voltage: 3.5V Minimum voltage: 0V	
	Input Logic Level	Logic 1: 3.0V ~ 3.5V Logic 0: 0V ~ 1.0V	
	Input Current	5mA	

	Isolation Protection	Not support electrical isolation
Certifications	EMC	IEC 61000-4-2 (ESD) Level 3
		IEC 61000-4-4 (EFT) Level 3
		IEC 61000-4-5 (Surge)Level 3

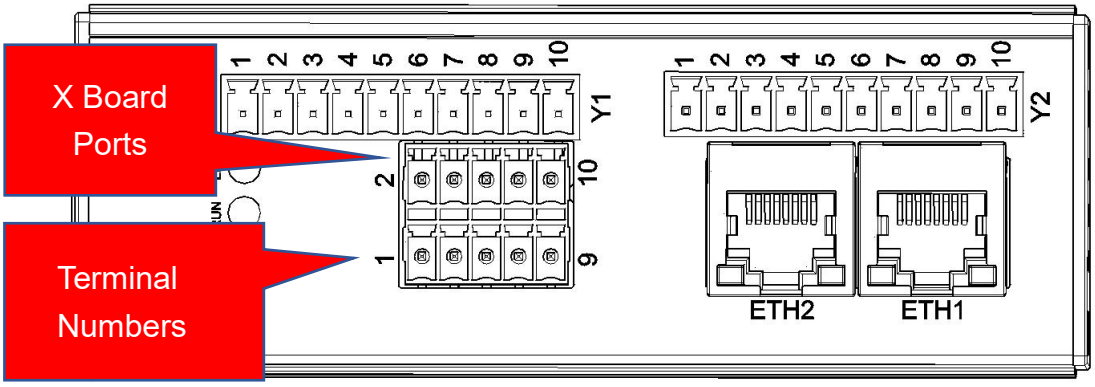
The GPIO ports do not support electrical isolation and cannot withstand transient high voltage or large current.

1.3 Model Selection

No.	Name	Model	Signal Type
1	1CH RS485+1CH RS232+1CH CAN+2CH GPIO Module	X8	RS485: Differential signaling RS232: Digital signaling CAN: Differential signaling GPIO: Digital Input and Digital Output

2 Wiring

2.1 Terminal Definitions



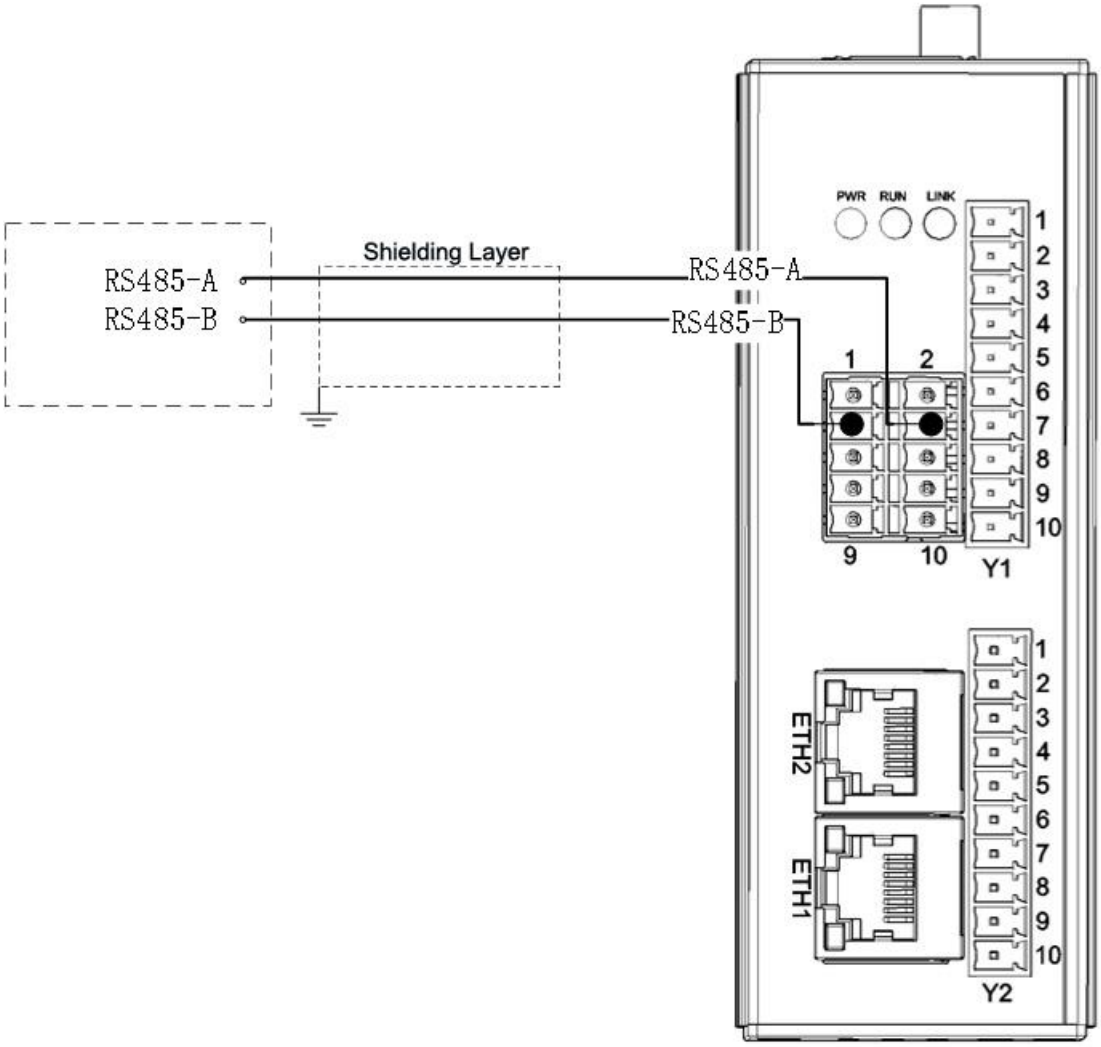
Notice: Please refer to the product's label for the specific terminal numbering sequence.

Terminal NO.	Definition	Description	Terminal NO.	Definition	Description
1	CAN0	CAN0-L	2	CAN0	CAN0-H
3	RS485	RS485-B	4	RS485	RS485-A
5	RS232	RS232-RX	6	RS232	RS232-TX

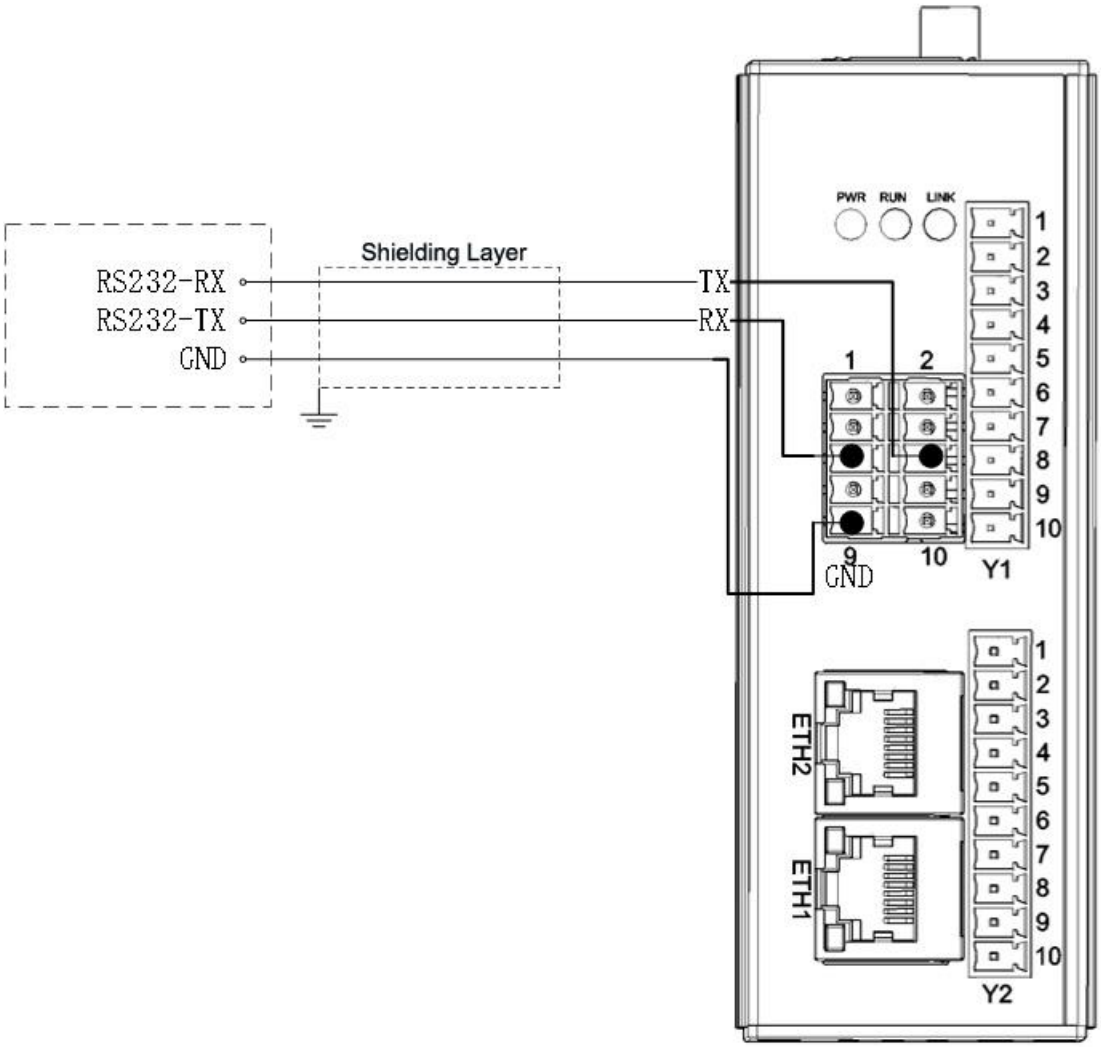
7	GPIO 1	GPIO1	8	GPIO 2	GPIO2
9	GND	Ground Terminal	10	PGND	Ground Terminal

2.2 Connection Example

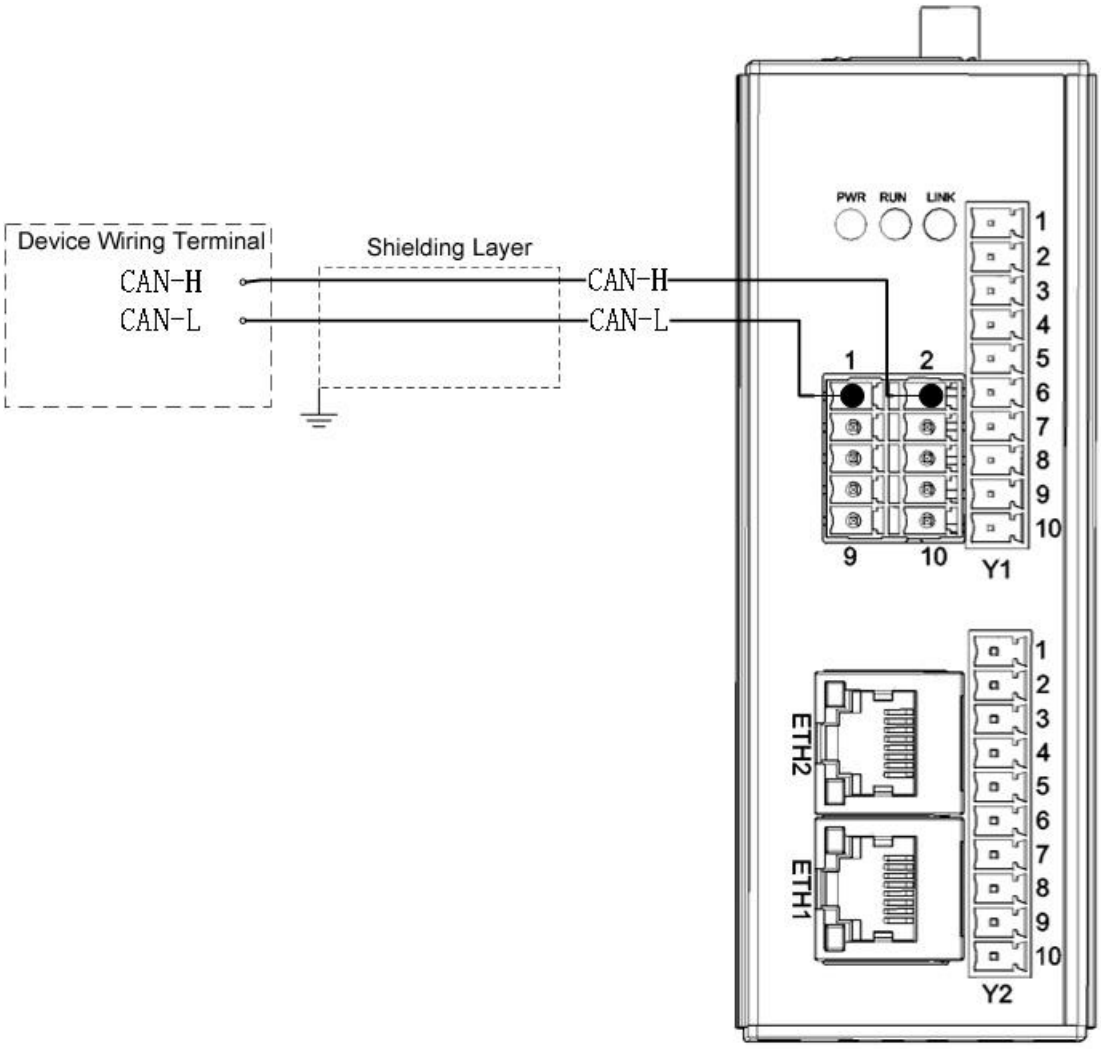
2.2.1 RS485 Connection



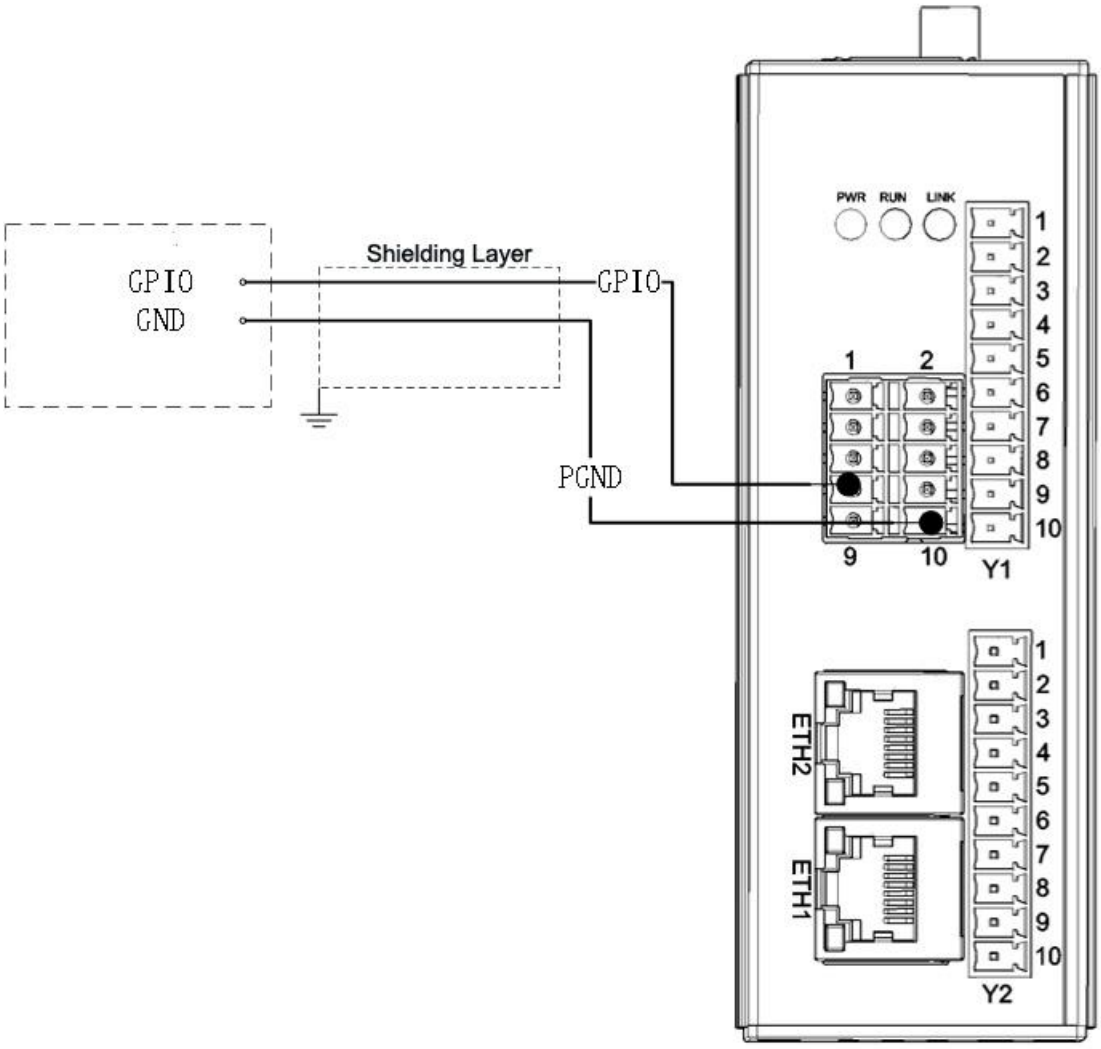
2.2.2 RS232 Connection



2.2.3 CAN Connection



2.2.4 GPIO Connection



3 Warranty Terms

1) This equipment will be repaired free of charge for any material or quality problems within one year from the date of purchase.
2) This one-year warranty does not cover any product failure caused by man-made damage, improper operation, etc

4 Technical Support

Shenzhen Beilai Technology Co., Ltd
Website: https://www.bliiot.com