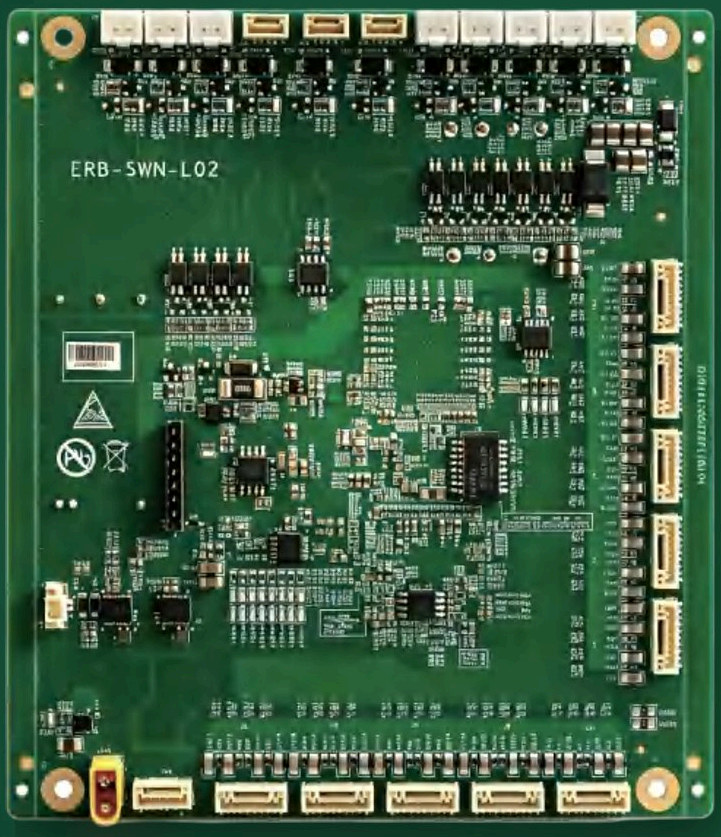
EQIO

ERB-SWN-L02

PRODUCT MANUAL

Multi-Port Gigabit Layer-2 Ethernet Switch Board

Network and EtherCAT board · Robot inter...



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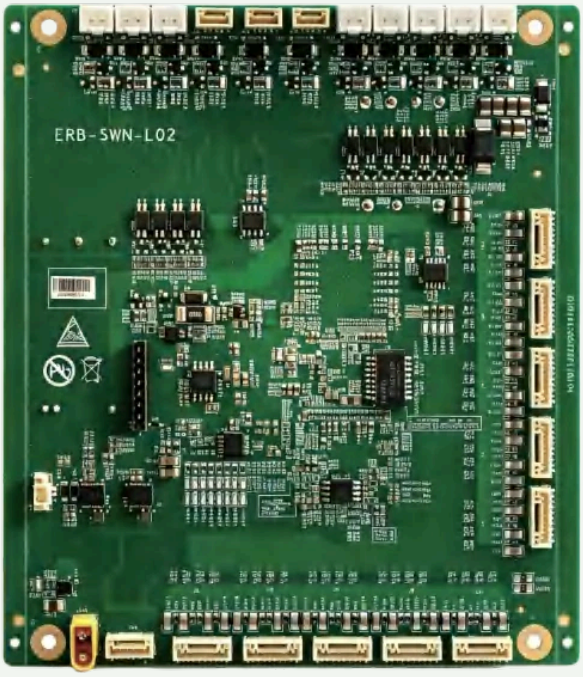
01 OVERVIEW

Multi-Port Gigabit Layer-2 Ethernet Switch Board

Network and EtherCAT board · Robot internal network · Distributed equipment interconnect · Auxiliary power distribution

ERB-SWN-L02 switch core supports at least 11-ch Gigabit Ethernet, board external brought out 10-ch network and settings internal interconnect, provides 7-ch24V and 4-ch12V independent can control isolated power, used for distributed equipment interconnect.

5-ch isolated RS-485 facilitates attach management equipment, switch unit and MCU via internal I/O connect, network and power output group organize. Suited to robot sensing node, multi equipment connection and distributed control system, communications aggregation and auxiliary power centralized layout.



Product appearance reference; shipped units may differ.

Key features

- 10-ch external Gigabit Ethernet
- 7-ch 24V, 4-ch 12V can control isolated output
- 5-ch isolated RS-485
- Supports cascade, VLAN and STP/RSTP
- MCU management and RTC

02 FUNCTIONS

Functions and engineering value

Multi-port Gigabit Ethernet connect

ERB-SWN-L02 switch core supports at least 11-port Gigabit Ethernet, board external actual brought out 10-ch, additional has internal interconnect resources. External port quantity should per board-level configured with note, not can chip port total directly treat as can connect external equipment number; cascade and network group required combined with system topology planning.

Layer-2 switch and status management

Switch core supports VLAN, STP/RSTP, multicast listen and port certification etc.function, independent MCU and RTC used for management related task. 5-ch isolated RS-485 provides peripheral management connect, switch unit and MCU between interconnect resources can used for matching firmware function, specific management I/O must follow delivery implements confirm.

Multi etc.grade isolated auxiliary power

Board settings 7-ch 24V and 4-ch 12V independent can control isolated power, can per voltage and load group connect peripheral equipment. Each channel power requirements different, website input capability gives lower limit rather than complete load budget, not cannot from this claim has output can any conditions under at the same time up to listed capability.

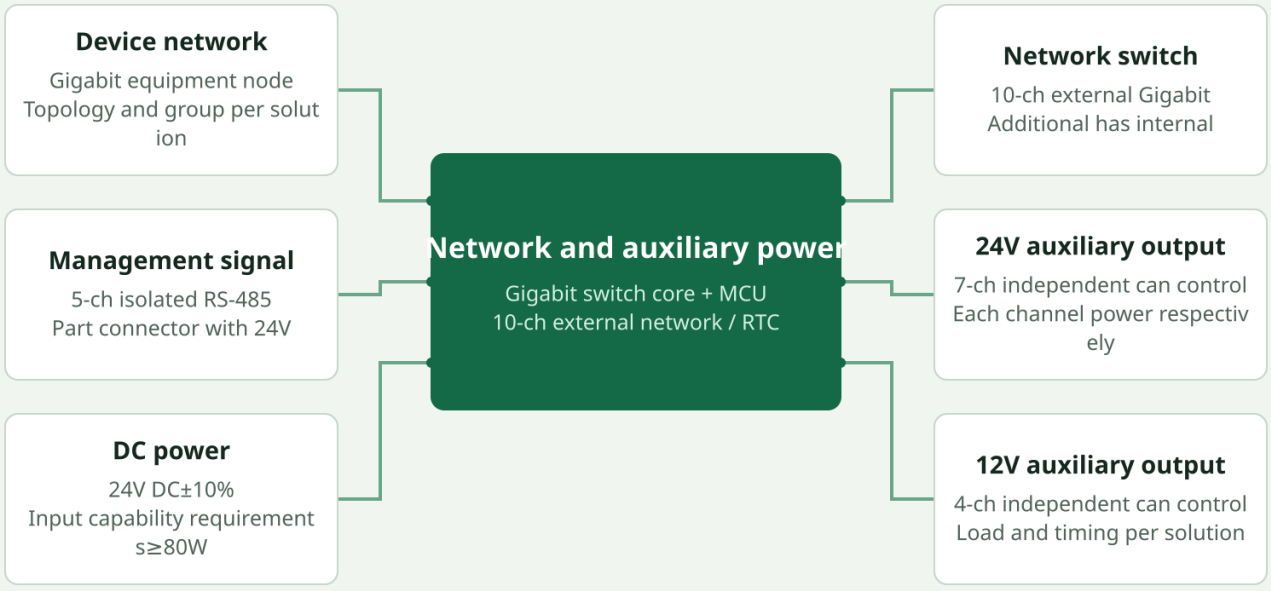
The functional notes explain the product’s role from published configuration. Optional functions, software and peripherals follow the project definition. Chip capability is not the same as implemented I/O.

03 ARCHITECTURE

Functional blocks and system connections

FUNCTIONAL BLOCK DIAGRAM

ERB-SWN-L02



Functional relationships · lines do not show internal circuits, pins or dedicated bus topology

Function relationship illustration, based on website I/O and configured with compiled; not indicates actual on-board circuit, independent bandwidth or not published chip interconnect implements.

Platform and I/O

The board multi-port Gigabit switch core, independent MCU and isolated power group consists of network and auxiliary power distribution platform, published data not has specified chip model. Should respectively lists core at least 11-port resources, board 10-ch external port and internal interconnect relationship, not can on-chip capability write into already brought out external I/O.

> **Reading the diagram**
>
> Solid lines show published functional relationships, not on-board buses, bridge chips or connector pins. Optional controllers, radios, storage and software follow the configuration and interface files.

04 SPECIFICATIONS

Technical specifications

Compiled from published product data. Batch, I/O and environmental ratings follow the order confirmation.

Core system

Multi-port Gigabit Ethernet switch chip	Supports at least 11-ch Gigabit network network switch, supports multi chip cascade supports loop detection, STP/RSTP, IGMP Snooping, VLAN, 802.1X port certification etc.L2 switch core function
MCU	Clock≥72MHz, Flash≥128KB, SRAM≥32KB
RTC	MCU mount RTC RTC
Power output	7-ch independent can control 24VDC±10%isolated power (4-ch single channel power≥7.5W, 1-ch power≥1W, 2-ch single channel power≥50W) 4-ch independent can control 12VDC±10%isolated power (1-ch power≥1W, additionally 3-ch single channel power≥2W)
Power input	24V DC±10%, power≥80W

I/O and expansion

External I/O	MCU: 5-ch isolated RS-485,including 2 connector respectively includes 1-ch24V, Gigabit switch: 10-ch Gigabit Ethernet
Debug interface	MCU debug UART/JTAG I/O
Interconnect I/O	Switch and MCU: 1-chI2C, 1-ch reset signal, 1-ch network

Environmental conditions

Operating temperature	-40°C~55°C (temperature-rise limit 95°C, 85°Calarm threshold), storage temperature: -55°C~+70°C

Mechanical specifications and system requirements

Specification	118 × 148 × 23mm (±2mm), weight≤0.12kg (not including pack fitted, allowed deviation±10g), board thickness 1.6mm

05 APPLICATIONS

From product capability to applications

Distributed robot network

Can used 10-ch external Gigabit port connect spread robot equipment node, and via switch function organize network group and on grade connect. Requires avoid loop or control multicast stream quantity when, should confirm actual firmware function and configured with ingress, again per actual node quantity and data stream verification system network.

Multi device communications and power distribution

Suited to network interconnect and 24V, 12V auxiliary power centralized the same module, per equipment voltage and load selection corresponding isolated output. System design should establish port, power channel and equipment should relationship, item by item check boot shock, continuous load and channel at the same time used power conditions.

Distributed status management

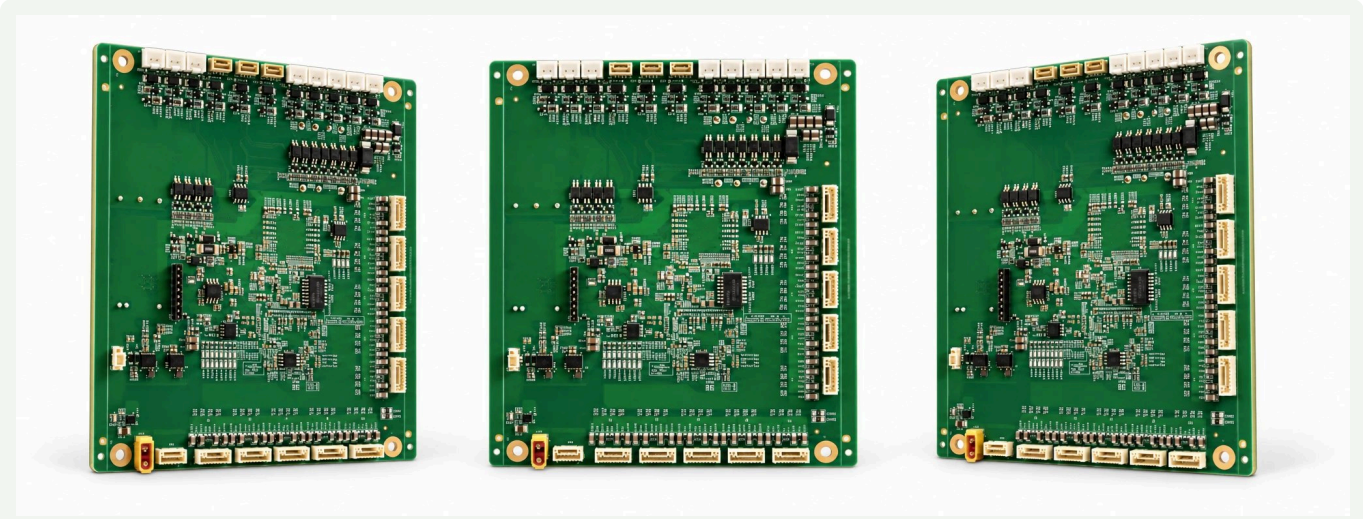
Can uses 5-ch isolated RS-485 and peripheral management equipment switch status, again combined with MCU and RTC organize equipment management procedure. Part serial connector still includes 24V power, field routing requires stated power and signal pinout, network fault and single equipment restart recovery process should bring-up in inspection.

Integration checks

Port aperture	Switch core≥ 11-ch Gigabit, board external 10-ch; internal network interconnect not can as into extra external connector.
Power group	7-ch24V, 4-ch12V isolated output; per channel check power and at the same time load, not cannot only per input≥80W estimate.
Management I/O	5-ch isolated RS-485, part connector including 24V; switch function, configured with tool and MCU software per delivery confirm.
Operation conditions	24V±10%input, operation−40–55°C, storage−55–70°C; board outline 118 × 148 × 23mm.

06 CONFIGURATION

Appearance, configuration and selection



Multi-angle reference (generated from product photos); shipped units may differ.

Configuration

Uses 24V DC input, network core settings internal interconnect, board dimensions 118 × 148mm.

Selection guide

Order confirmation	Batch, I/O and environmental ratings follow the order confirmation
Published data	Compiled from published product data; EQIO provides selection and system integration
Configuration talk	Share the application, I/O count, environment and software so a configuration can be proposed

Request a quotation and selection support

Email lyping@eqio.com Phone +86 182 8191 2988
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EQIO

Easy · Quick · Input · Output

BRAND

Measurement and control, made easy.



EQIO product family · concept rendering

Brand story

EQIO builds measurement and control products and systems. The name stands for Easy Quick Input Output: Easy is a clear structure that is quick to learn, Quick is a direct path to efficient delivery, and Input / Output is every link between the device under test and the control system.
The soft single-cycle wave inside the Q links the brand to signals, acquisition and I/O. “Measurement and control, made easy” is our promise for every selection, integration and delivery.

What we do

Products

Data acquisition, test instruments, control and I/O, modular platforms, software, cables

Systems

Configured to the measurand, channels, accuracy and software, from design to commissioning

Support

Selection advice, training, maintenance and calibration

How we deliver

01
Requirements

02
Solution design

03
Build & integration

04
Factory test

05
Delivery & training

06
Ongoing support

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