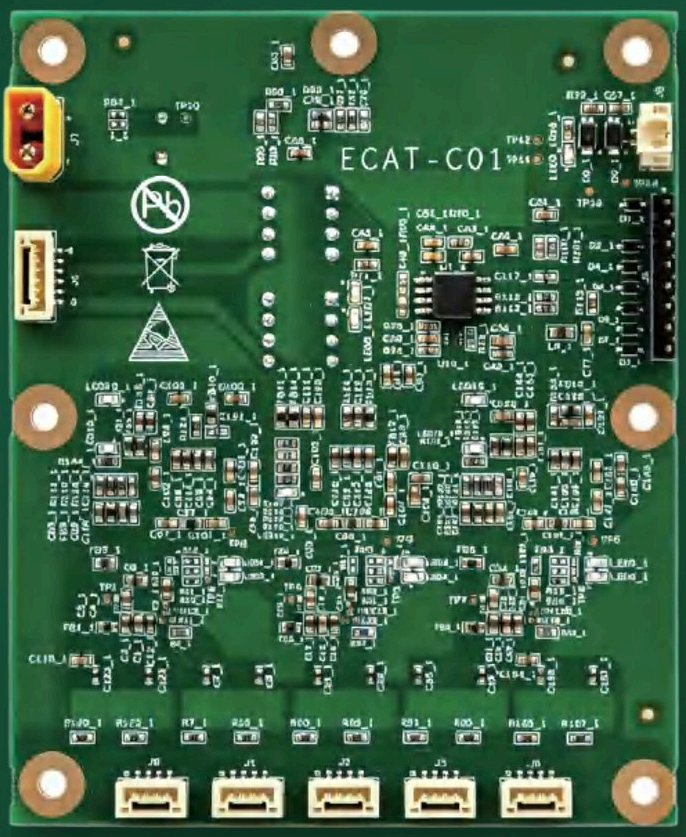
EQIO

ERB-ECAT-C01

PRODUCT MANUAL

Five-Port EtherCAT Communication Board

Network and EtherCAT board · Robot commu...



Measurement and control, made easy.

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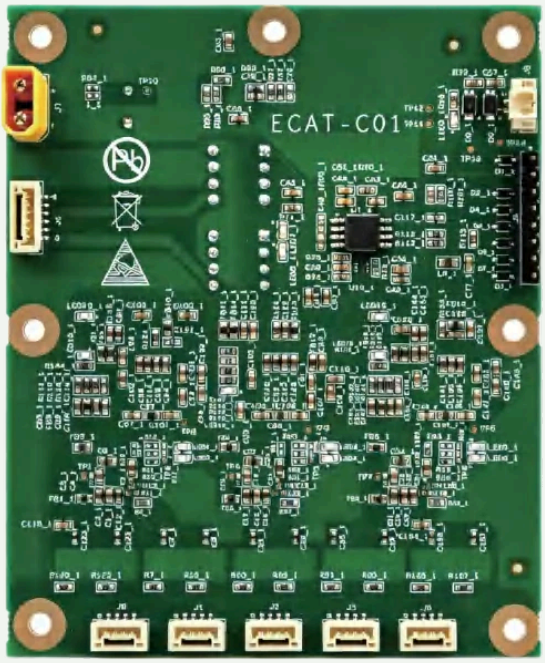
Easy · Quick · Input · Output

01 OVERVIEW

Five-Port EtherCAT Communication Board

Network and EtherCAT board · Robot communications · Motion control network · Bus interconnect · EtherCAT

ERB-ECAT-C01 provides 5-ch independent brought out EtherCAT I/O and 2-ch isolated RS-485, supports 100Mbps full dual industrial and distribution clock related function, integrates MCU management and 24V DC input, used for motion control network attach.
Each channel EtherCAT uses independent connector, facilitates organize equipment link, isolated serial used for peripheral management connect. Compact board outline and RTC suited to robot actuation unit and automation equipment integrates, can as multi node motion control network in communications board card.



Product appearance reference; shipped units may differ.

Key features

- 5-ch independent connect EtherCAT I/O
- 2-ch isolated RS-485
- 100Mbps full dual industrial
- MCU management and RTC
- Distribution clock and linear topology supports

02 FUNCTIONS

Functions and engineering value

5-ch EtherCAT connect

ERB-ECAT-C01 external provides 5-ch EtherCAT I/O, all via independent connector brought out, facilitates organize multiple equipment node physical connect. Website at the same time lists single ESC at least 3-port capability, on-board chip quantity and 5-port between connect implements and not published, not cannot from this inferred topology.

Timing and topology resources

Published ESC capability including 100Mbps full dual industrial, distribution clock, linear topology and redundant loop related supports, can as motion network solution design reference. Specific main from role, synchronous accuracy and fault recovery still depends on to actual chip combination, firmware and network configured with, should system layer verification.

Management and maintenance I/O

Board integrates MCU, RTC and 2-ch isolated RS-485, used for matching equipment management and peripheral communications, MCU UART and JTAG facilitates debug maintenance. 24V input and compact board outline suited to embedded equipment, I/O power, signal level and management protocol requires per actual wiring and firmware implements confirm.

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-ECAT-C01



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

Product EtherCAT communications resources, MCU management unit and RTC forms, website not listed ESC or MCU specific model. Single chip port capability, 5-ch board-level connector and system network role requires separate note; protocol standard supports not should extend without provides certification, synchronous accuracy or motion control performance claim.

> **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

ESC chip	Single ESC chip has at least 3 EtherCAT port (at least 2 built-in PHY), complies with ETG.1000 standard supports 100Mbps full dual industrial, distribution clock synchronous, redundant loop design and linear topology
MCU	Clock≥72MHz, Flash≥128KB, SRAM≥32KB
RTC	MCU mount RTC RTC
Power input	24V DC±10%, power≥15W

Mechanical specifications and system requirements

Specification	78 × 79 × 25.6mm (±2mm), weight≤0.04kg (not including pack fitted, allowed deviation±10g), board thickness 1.6mm

I/O and expansion

External I/O	2-ch isolated RS-485 (from the same connector brought out), 5-chEtherCAT (5-ch all independent connector brought out)
Debug interface	MCU debug UART/JTAG I/O

Environmental conditions

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

05 APPLICATIONS

From product capability to applications

Motion control network attach

Can robot or automation equipment in used 5 independent connector organize EtherCAT circuit, and via isolated RS-485 connect management equipment. Deployment when first confirm board network in role and port relationship, again check master software, from station describe and equipment link, avoid I/O quantity directly etc.same to control axis count.

Distributed actuation unit

Suited to as distributed actuation equipment communications hosts board, network connect and management I/O centralized compact space internal. Requires uses distribution clock when, should check node supports, master configured with and synchronous policy, and actual cables length and equipment load under verification timing behaviour, not can add not published accuracy value.

Device communications bring-up

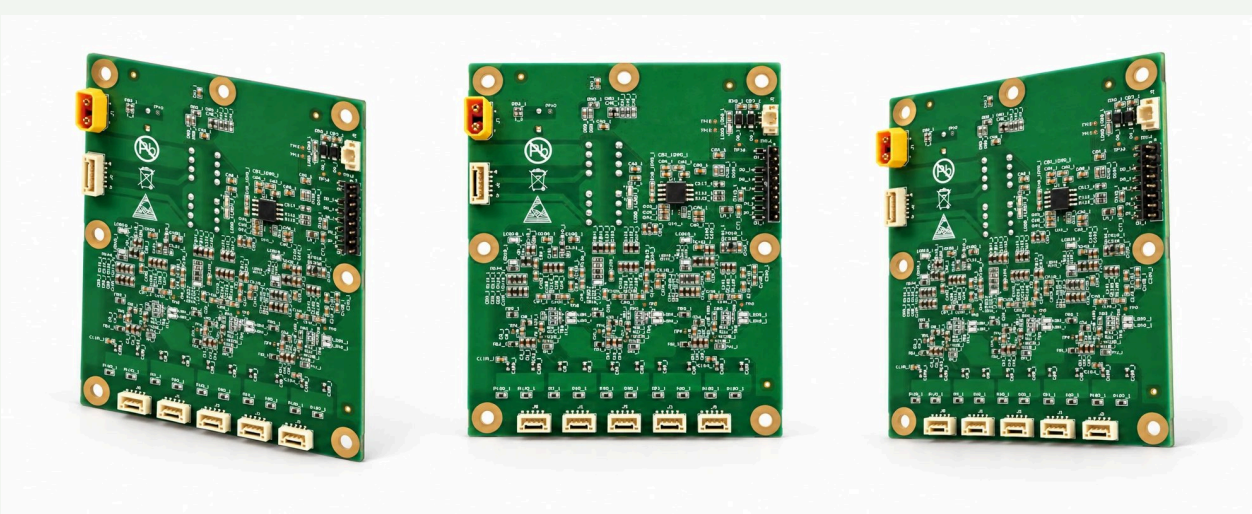
Can uses independent EtherCAT connector, isolated serial and MCU debug interface build device communications bring-up environment, respectively observe application link and management status. Redundant or link-loss recovery has requirements system, should confirm specific firmware supports and test switch, not cannot only from chip function list treat as system already enable.

Integration checks

Port and chip	External 5-chEtherCAT; single ESC≥ 3-port device capability, on-board chip quantity and topology not published.
Protocol and synchronous	100Mbps full dual industrial and distribution clock etc. Published supports item; main from role, synchronous accuracy and redundant mechanism required confirm.
Management and power	2-ch isolated RS-485, MCU UART/JTAG; 24V±10%, power capability requirements≥15W.
Structure and environment	78 × 79 × 25.6mm, weight≤0.04kg; operation−40–55°C, storage−55–70°C.

06 CONFIGURATION

Appearance, configuration and selection



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

Configuration

Uses 24V input, provides MCU debug UART and JTAG connect, board dimensions 78 × 79mm.

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
Web eqio.com

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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