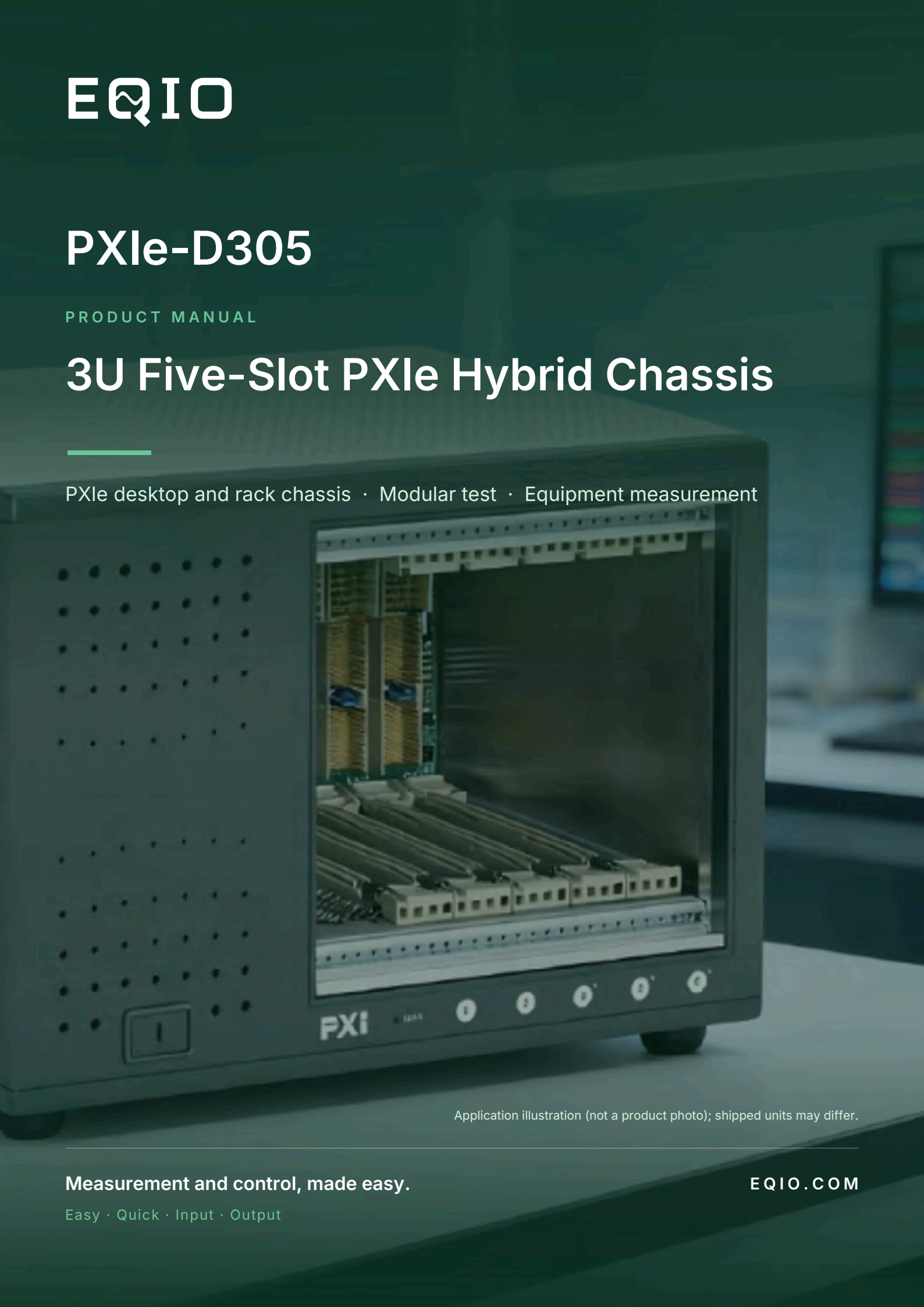
EQIO

PXIe-D305

PRODUCT MANUAL

3U Five-Slot PXIe Hybrid Chassis

PXIe desktop and rack chassis · Modular test · Equipment measurement



Application illustration (not a product photo); shipped units may differ.

Measurement and control, made easy.

Easy · Quick · Input · Output

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01 OVERVIEW

3U Five-Slot PXIe Hybrid Chassis

PXIe desktop and rack chassis · Modular test · Equipment measurement · OEM system integration · PXI Express

PXIe-D305 uses compact 5-slot card-cage structure, integrates AC input, VCXO clock and forced air, supports modular controller and I/O board integrates, used for in small scale test, measurement and OEM system build.

5-slot backplane can combination compute controller and measurement module, chassis provides unified power, clock and cooling space. Compact structure suited to desktop or equipment adjacent deployment, can per test task arrangement communications, acquisition and signal processing board, facilitates build modular test node.



Application illustration (not a product photo); shipped units may differ.

Key features

- Compact 3U 5-slot structure
- 100–240VAC AC input
- VCXO backplane clock
- 126CFM forced air
- 257 × 212 × 177mm housing

02 FUNCTIONS

Functions and engineering value

Compact module hosts

PXIe-D305 3U 5-slot structure hosts system controller and I/O board, 257 × 212 × 177mm housing suited to desktop or equipment adjacent deployment. Chassis handles backplane connect, power and cooling etc.basic task, compute and acquisition capability from selected controller and module combination forms.

Power and air circulation

Chassis uses 100–240VAC AC input and 126CFM fan organize forced air circulation, website single slot cooling capability 38W, suited used environment 0–50°C. Planning module quantity when, should treat each slot power consumption, airflow conditions and installation space together check, avoid only per slot position quantity arrangement load.

Backplane clock and system combination

Backplane provides VCXO clock resources, can and controller and measurement module together forms modular test system. Clock resources storage and not directly gives complete set system synchronous accuracy, actual clock used, trigger connect and acquisition synchronous method should combined with selected board and application software confirm.

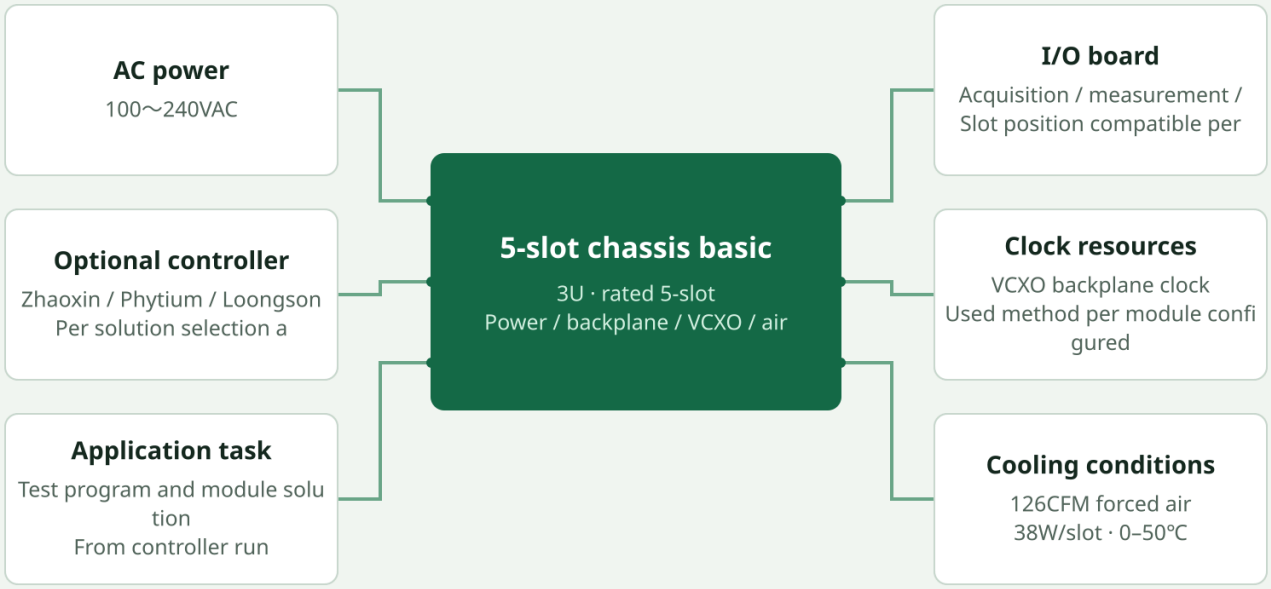
The functional notes explain the product’s role from published configuration. Optional functions, software and peripherals follow the project definition. Chip capability is not the same as implemented I/O.

03 ARCHITECTURE

Functional blocks and system connections

FUNCTIONAL BLOCK DIAGRAM

PXIe-D305



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

Chassis function relationship illustration; controller and I/O board per solution option, in the diagram controller represent a optional configuration, not indicates at the same time installation all processing platform.

Platform and I/O

The product is PXIe chassis, published configuration including 5-slot backplane, AC power, VCXO clock and air cooling system, chassis this body does not has specified fixed CPU. Optional controller processor parameters should be treated as option compare data present, not can multi type CPU or controller memory, system bandwidth and into chassis standard configuration.

> **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.

Chassis and backplane

Module specifications	3U
Rated slot total	5-slot
Input power	100~240VAC
Backplane clock	VCXO
Air cooling	126CFM fan, forced air circulation (positive pressure)
Single slot cooling	38W, operating temperature 0~50°C
Dimensions	257×212×177mm
Weight	≤5.0kg
Interface specification	PXI-5 PXI Express Hardware Specification Rev1.1

05 COMPONENTS

Processor and device specifications

Device figures come from vendor publications and describe the chip or module. The implemented product follows the specification tables. Optional devices are supplied with the selected configuration.

Zhaoxin KX-6000G series (Optional)

Series CPU core count	4-core
Series published high-speed cache	4 MB
Series memory controller	Dual channel DDR4-3200
ISA	X86 32/64-bit, SSE4.2/AVX
Display interfaces capability	DP/HDMI/VGA, 4K display
Native PCIe resources	16 lanes PCIe3.0
Native USB resources	4×USB3.2 Gen1、2×USB2.0
Native storage interfaces	2×SATA3.2
Low-speed expansion i/O	SPI, LPC etc.

Zhaoxin KX-6000G series (Optional) (continued)

Acceleration command	SM2、SM3、SM4
Hardware virtualization	Processor and IO virtualization

Zhaoxin KX-6640MA (Optional)

Processor core count	4-core
Hardware threads number	4 threads
Website partnership data listed clock	2.2 GHz
CPU series ISA	X86 32/64-bit; SSE4.2, AVX
Series memory controller	Dual channel DDR4-2666, chip series up to 64GB

05 COMPONENTS

Processor and device specifications (continued)

Zhaoxin KX-6640MA (Optional) (continued)

Series integrates graphics and display	Integrates 3D graphics and video de code; supports DP/HDMI/VGA category and 4K display
Series PCIe resources	Up to 16 lanes PCIe3.0
Series native USB/SATA resources	2×USB3.1、4×USB2.0、2×SATA 3.2
Hardware virtualization	Processor and IO virtualization
Acceleration command	SM3、SM4

Phytium D2000 (Optional) (continued)

Hardware virtualization	Supports
Floating-point and SIMD	Single/dual accuracy floating-point and ASIMD
Chip safety architecture	PSPA 1.0

Phytium D2000 (Optional)

Processor core count	8-core
Processor micro architecture	FTC663
ISA and actuation mode	ARMv8; supports ARM64 and ARM32 actuation mode
Up to clock	2.3 GHz
Layer-2 cache	8 MB
L3 cache	4 MB
CPU memory controller	2 DDR4 I/O
CPU PCIe resources	34 lanes PCIe 3.0
CPU network controller	2 Gigabit Ethernet I/O
Other on-chip I/O	1 × SD2.0, 4 × UART, 32 × GPIO, 4 × I2C, 1 × QSPI, 2 × general-purpose SPI, 3 × CAN, 2 × WDT, 16 × external interrupt

05 COMPONENTS

Processor and device specifications (continued)

Loongson Chinese Academy 3A6000 (Optional)

ISA	LoongArch
Physical core number	4-core
Logic processor number	8 threads
Processor core	64-bitLA664, 6-issue out-of-order actuation
Frequency	2.0–2.5GHz
Vector unit	128-bit and 256-bit
Per core layer-1 command cache	64 KB/core
Per core layer-1 data cache	64 KB/core
Per-core private has layer-2 cache	256 KB/core
Shared L3 cache	16 MB

Loongson Chinese Academy 3A6000 (Optional) (continued)

Memory controller	2-ch72-bitDDR4-3200, supports ECC
High-speed bridge chip interconnect	1-chHyperTransport 3.0
Native low-speed I/O	1-chSPI, 1-chUART, 2-chI2C, 16-chGPIO
Package	BGA, 35 × 35mm, 1190 pins
Typical power consumption	38W@2.5GHz
Dual accuracy peak compute	240 GFLOPS

Sources: Shanghai Zhaoxin integrates Co., Ltd., KX KX-6000G series processor; Shanghai Zhaoxin integrates Co., Ltd., Lenovo Zhaoyang CF4620 custom model parameters (website case study); Shanghai Zhaoxin integrates Co., Ltd., High-performance Micro ATX industrial main board (website technical news); Shanghai Zhaoxin integrates Co., Ltd., KX KX-6000 series processor; Phytium IT Co., Ltd., Phytium Tengrui D2000 high-performance desktop CPU; Loongson Chinese Academy, Loongson 3A6000 product parameters.

06 APPLICATIONS

From product capability to applications

Desktop modular test

Can around a small amount measurement, acquisition and communications board card build compact desktop test node, system controller run test program, chassis provides unified installation and power space. Selection when first determine module combination, again check specific slot position compatible, total power consumption and required cooling conditions.

Equipment adjacent measurement node

Equipment adjacent layout local measurement node when, can uses compact housing reduce installation occupancy, controller and I/O board centralized management. AC input range facilitates solution design, actual layout still requires reserved chassis airflow space, and check field temperature and module continuous operation load.

OEM test system integration

Suited to as OEM measurement or automation system module hosts unit, via replacement controller and function card adapts different task. External port, operating system and data processing capability from option solution determines, design file should respectively list chassis basic configured with and already installation compute and measurement module.

Integration checks

Slot position layout	Website only lists rated 5-slot, specific system slot, hybrid slot assign and module compatible must per backplane confirm.
Thermal load	Single slot 38W cooling should environment 0–50°C; check module continuous power consumption, slot position spacing and airflow.
Power installation	100–240VAC; dimensions 257 × 212 × 177mm, weight≤5kg, reserved ventilation and cables space.
Optional controller	Zhaoxin, Phytium, Loongson all optional platform; processor, system image and storage not belongs to chassis default configured with.

07 CONFIGURATION

Configuration, options and selection

Configuration

Can paired with Zhaoxin, Phytium or Loongson PXIe controller; single slot cooling capability 38W, suited used environment 0–50°C.

System controller	Zhaoxin KX-6000G / Zhaoxin KX-6640MA / Phytium D2000 / Loongson 3A6000

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

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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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