EQIO

MPC-156-RP

PRODUCT MANUAL

15.6-inch Phytium Thin Rugged Notebook

Phytium D2000 8-core processor



Appearance reference (generated from product photos); shipped units may differ.

Measurement and control, made easy.

Easy · Quick · Input · Output

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01 OVERVIEW

15.6-inch Phytium Thin Rugged Notebook

Rugged notebook and tablet · Equipment detection · Data acquisition · Survey and mapping · Phytium

MPC-156-RP uses Phytium D2000 8-core processor, configured with 8 GB DDR4 memory and not less than 256GB solid-state storage, supports MXM independent GPU expansion, integrates 15.6-inch display and multi-channel circular connector I/O, suited to mobile data acquisition and field operations. 4-ch network and dual serial via circular connector centralized connect, HDMI, USB and audio facilitates daily peripherals attach. Built-in battery and thin housing suited to portable use, supports equipment maintenance, inspection log and field measurement task in mobile used.



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

Key features

- Phytium D2000 8-core platform
- 15.6-inch Full HD display
- 8GB memory, at least 256GB solid-state storage
- 4-ch LAN and dual serial circular connector
- MXM independent GPU expansion supports

02 FUNCTIONS

Functions and engineering value

Thin portable compute

Phytium D2000 8-core processor clock 2.3GHz, standard 8GB DDR4 and not less than 256GB solid-state storage, memory can expansion to 32GB. 380 × 285 × 32mm housing and no more than 3.1kg weight facilitates portable use, suited to field run via platform adapts equipment application.

Multi-channel circular connector and display peripherals

4-ch LAN, dual serial and power via circular connector brought out, standard HDMI, 2-ch USB3.0 and headset I/O used for daily peripheral connection. Supports MXM independent GPU expansion, but specific GPU model, performance, driver and shipped with the unit range required single independent stated, not can per already fitted GPU describe.

Battery management and temperature version

7500mAh battery supports built-in charging and sleep, standby mode, data in not less than six hours standby time. Standard version operating temperature -30–60°C, wide temperature version -40–60°C, two kinds of version configured with and verification conditions should respectively confirm.

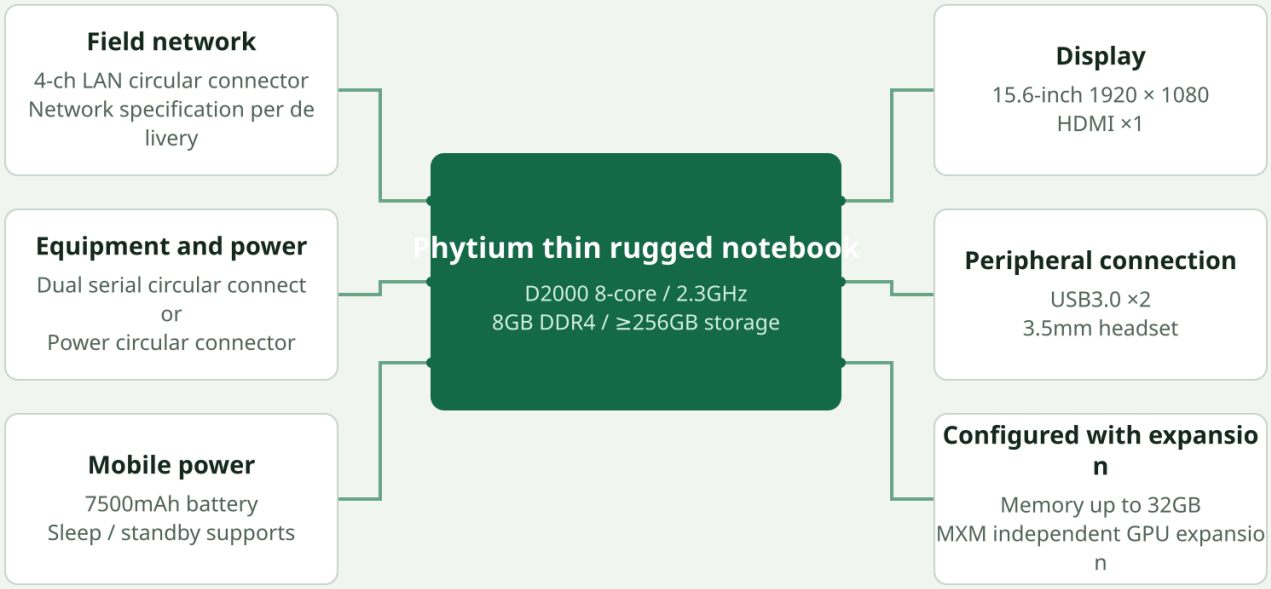
The functional notes explain the product’s role from published configuration. Optional functions, software and peripherals follow the project definition. Chip capability is not the same as implemented I/O.

03 ARCHITECTURE

Product functional architecture

FUNCTIONAL BLOCK DIAGRAM

MPC-156-RP



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

From published specification illustrative functional grouping, does not show internal circuits, on-board bus or signal routing; I/O direction actual protocol shall prevail. MXM expansion supports, not cannot from this inferred already installation GPU.

Platform and I/O

Uses Phytium D2000 8-core CPU, 2.3GHz, configured with 8 GB DDR4 and supports up to 32GB solution, solid-state storage not less than 256GB. Vendor profile lists FTC663, ARMv8, 8MB layer-2 cache and 4MB L3 cache; system, GPU and memory expansion all require per product delivery version check.

> **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

Processor	Phytium D2000, 8-core, clock 2.3GHz
Capacity	DDR4 8GB (maximum supports 32GB expansion) + electronic HDD (capacity not less than 256GB)
GPU	Supports MXM independent GPU expansion
Display	15.6-inch display, resolution 1920 × 1080

I/O and expansion

Standard interfaces	1 HDMI, 2 USB3.0, 1 3.5mm microphone / headset audio I/O
Circular connector I/O	4 LAN Ethernet port, 2 serial, 1 power I/O

Mechanical specifications and system requirements

Dimensions / weight	380mm × 285mm × 32mm (long × wide × high, tolerance ±2mm), weight≤3.1kg
Environmental ratings	Operating temperature: -30°C~60°C (standard version), -40°C~60°C (wide temperature version), 5%-90% humidity
Battery	7500mAh, standby time not less than 6 hours, supports sleep, standby mode, supports built-in battery charging

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.

Phytium D2000

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

Phytium D2000 (continued)

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

Sources: Phytium IT Co., Ltd., Phytium Tengrui D2000 high-performance desktop CPU.

06 GALLERY

Appearance and scene

Reference views



Product appearance reference; shipped units may differ.

Scene



Application illustration (not a product photo).

07 APPLICATIONS

From product capability to applications

Mobile equipment detection

Can via circular connector network or serial connect equipment, 15.6-inch Full HD display view detection UI and result, USB3.0 used for data peripherals. D2000 platform requires should software and driver adapts, thin housing suited to multiple detection point between mobile, not should treat standby time as application runtime.

Field data acquisition workstation

4-ch LAN can per equipment and network role organize attach, dual serial used for compatible industrial equipment, local storage save application data. Project can according to cache requirement selection memory version, and complete wiring and acquisition load under verification power consumption, storage capacity and transmission stability.

Survey and mapping auxiliary terminal

Portable housing and battery power suited to operation point view data, actuation parameters configured with and compiled log, HDMI can external display equipment. If application requires graphics acceleration, should stated MXM GPU configured with and software compatible; actual positioning or measurement function from connect equipment and application provides.

Integration checks

Software architecture	Confirm D2000 should operating system, ARM application and peripherals driver, source data not specified system version.
GPU and memory	Confirm 8GB or expansion memory and MXM GPU specific model, shipped with the unit range.
Circular connector wiring harness	Check 4-ch LAN, dual serial and power pinout and electrical standard.
Temperature and runtime	Standard version and wide temperature version respectively confirm, six hours standby rather than task runtime.

08 CONFIGURATION

Configuration, options and selection

Configuration

Memory up to can configured with 32GB, provides standard and wide temperature version, configured with 7500mAh battery.

Temperature version	Standard version-30~60°C / wide temperature version-40~60°C; belong to different configured with, not automatic combined and
GPU	MXM independent GPU expansion; not gives specific GPU model and shipped with the unit range

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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