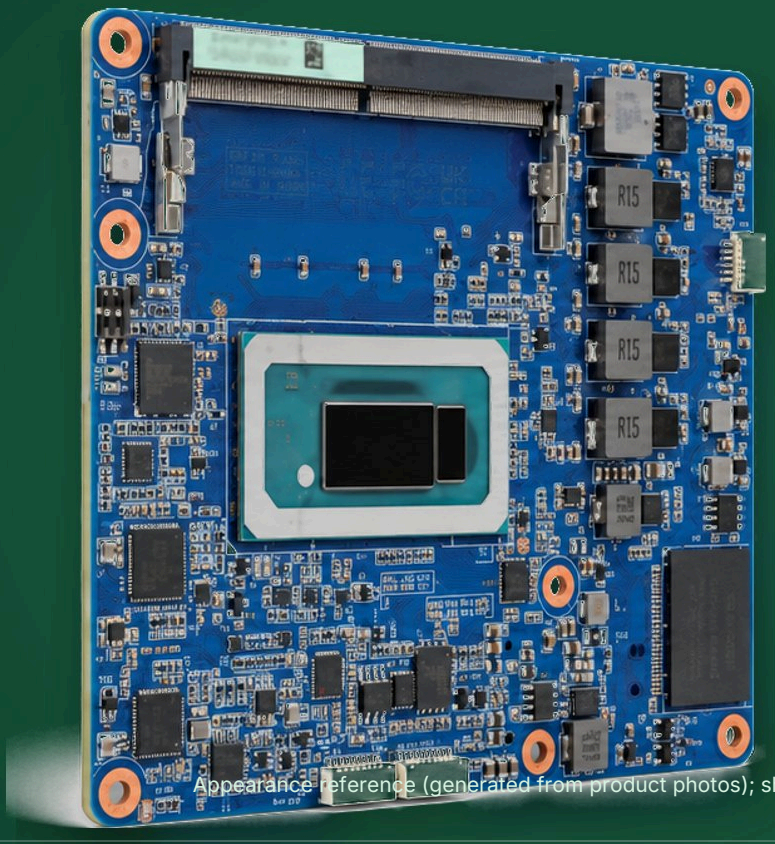
EQIO

COMe-1370

PRODUCT MANUAL

Intel i7-1370PE COM Express Type 6 Module

Intel Core i7-1370PE



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

Measurement and control, made easy.

Easy · Quick · Input · Output

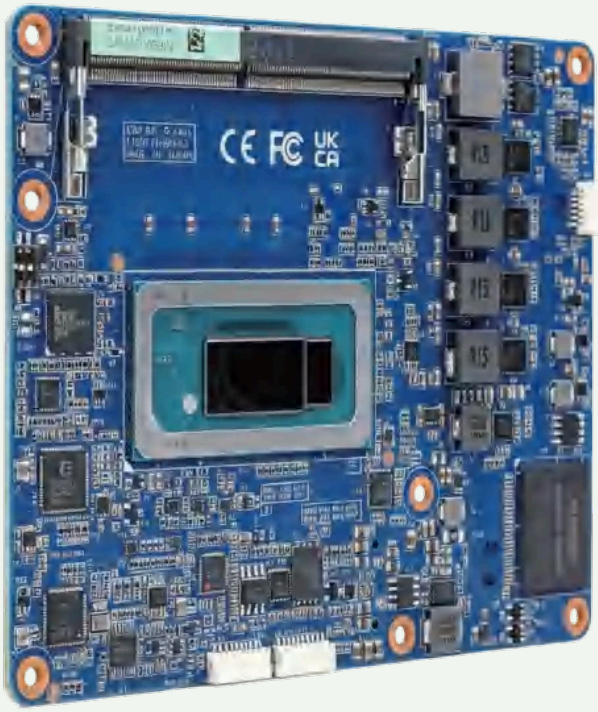
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01 OVERVIEW

Intel i7-1370PE COM Express Type 6 Module

COM Express compute module · Industrial control · Edge computing · Medical imaging · COM Express · Intel

COMe-1370 uses 13th-generation Intel Core i7-1370PE, supports up to 64GB DDR5 memory, provides PCIe Gen4, 2.5G bE and multi-display display interfaces, supports Windows LTSC and Ubuntu system, used for embedded compute integrates.
USB, serial, GPIO and industrial management bus can via carrier attach external equipment, dual SATA I/O supports system and data storage. Module centralized provides compute, display and network resources, suited to industrial terminal, automation test host and multi video operation node.



Product appearance reference; shipped units may differ.

Key features

- Core i7-1370PE processor
- DDR5 SO-DIMM, up to 64GB
- PCIe Gen4 and 2.5G bE connect
- Four displays display supports
- Dual SATA3.0 and multi-channel USB

02 FUNCTIONS

Functions and engineering value

Hybrid core and DDR5 platform

I7-1370PE uses 6 performance core and 8 efficiency cores, common 14-core 20 threads, together with up to 64GB DDR5 forms embedded compute platform. Different task scheduling method depends on operating system and application implements, product should per continuous power consumption and cooling conditions verification performance, not can core quantity replace task test.

Multi group high-speed device connection

Module lists Gen4 x8 and 2 Gen4 x4, and provides default Gen3 x1 and dual SATA configured with, can used for organize expansion card and storage resources. 2.5G bE connect supports network data HMI, USB4 belongs to BIOS optional solution, carrier connect and firmware settings required matching confirm rear only then include delivery I/O.

Four displays HMI and equipment management

3-ch DDI plus eDP supports four displays solution, per product specification can planning up to 4K display, used for operation and information show. UART, GPIO and management bus carries carrier equipment, EC handles board-level management role; multi-display at the same time operation conditions, peripherals signal level and related software I/O should each item verification.

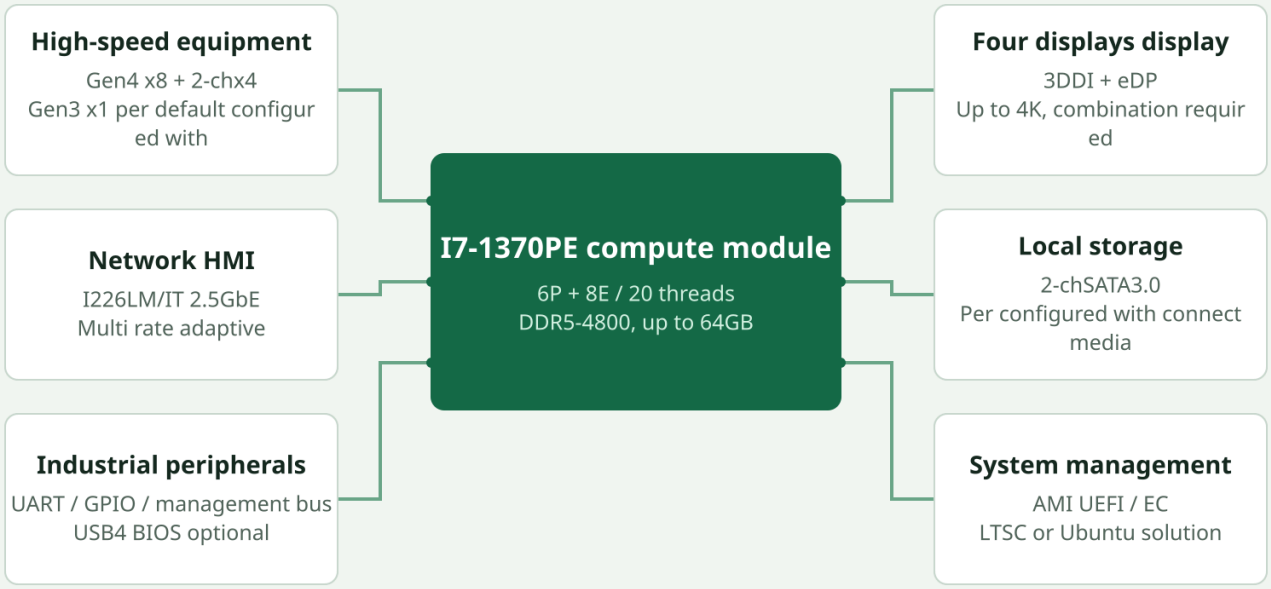
The functional notes explain the product’s role from published configuration. Optional functions, software and peripherals follow the project definition. Chip capability is not the same as implemented I/O.

03 ARCHITECTURE

Platform and functional relationships

FUNCTIONAL BLOCK DIAGRAM

COMe-1370



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

Functional relationship not represent processor internal bus or on-board topology; hybrid core scheduling, USB4 enable and multi-display combination must target system verification.

Platform and I/O

I7-1370PE 6 performance core, 8 efficiency cores consists of 14-core20 threads platform, module used DDR5 and provides integrates graphics, PCIe Gen4 and 2.5G bE resources. Board-level EC and firmware management peripheral connect, USB4, display combination and default link assign requires from carrier and BIOS solution together confirm.

> **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

CPU	13 generation Intel® Core™ i7-1370PE processor EC controller ITE IT5782
System memory	DDR5 4800MT/s SO-DIMM, maximum memory 64GB
Display	Intel integrates graphics, up to 96 actuation unit (EU)
BIOS	AMI UEFI BIOS, 256 Mbit SPI flash ROM
Operating system	Windows 10 Enterprise 2021 LTSC, Ubuntu 22.04 (kernel 5.15) on version

Environmental conditions

Operating temperature	Operating temperature: 0°C–60°C (standard version), -40°C–70°C (industrial version); storage temperature: -45°C ~ 85°C
Humidity	40°C @ 95% relative humidity, non-condensing

I/O and expansion

USB	2 × USB4 by TCP port (BIOS optional), 4 × USB3.2 Gen2, 8 × USB2.0
COM port	2 × UART (limited to RX/TX)
DIO/MIO	1 × 8-bit GPIO; 1 × SMBus, 1 × LPC (via ESPI to LPC bridge IC), 1 × I2C, 1 × GP SPI, 1 × SPI
Display interfaces	Four displays display supports, up to 4K (3DDI+eDP)
Network interfaces	Chip group 1 × Intel®I226LM/IT, I/O 10/100/1000/2500 Base-Tx GbE compatible
Storage interfaces	2-chSATA3.0 I/O
Expansion slots	1 × PCIe x8 (Gen4), 2 × PCIe x4 (Gen4), default: 5 × PCIe x1 (Gen3), 2 × SATA

Mechanical specifications and system requirements

Specification	125mm × 95mm, weight 0.2kg

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.

Intel i7-1370PE

Micro architecture codename	Raptor Lake
Manufacturing process	Intel 7
CPU core number	14
Performance core count amount	6
Efficiency cores quantity	8
CPU threads number	20
Processor rated base frequency	1.90 GHz
Up to turbo	4.80 GHz
Performance core up to turbo	4.80 GHz
Efficiency cores up to turbo	3.70 GHz

Intel i7-1370PE (continued)

Shared cache	24 MB Intel® Smart Cache
Processor basic power	28 W
Maximum turbo power	64 W
Thermal design power consumption	28 W
CPU memory controller capacity upper limit	96 GB
CPU memory controller supports type	DDR5-5200, DDR4-3200, LPDDR5/x-6400, LPDDR4x-4267 (each up to rate, MT/s)
Memory channel number	2
CPU ECC supports	Not supports

05 COMPONENTS

Processor and device specifications (continued)

Intel i7-1370PE (continued)

Integrates graphics unit	Intel® Iris® Xe Graphics eligible
IGPU up to dynamic frequency	1.40 GHz
IGPU actuation unit	96
Chip supports display quantity upper limit	4
Chip display output protocol	eDP 1.4b, DP 1.4a, HDMI 2.1
Processor PCIe version	Gen 4
PCH side PCIe version	Gen 3
CPU PCIe channel upper limit	20
Package	FCBGA1744
Package dimensions	50 mm x 25 mm

Intel i7-1370PE (continued)

VT-x virtualization	Supports
VT-d directional I/O virtualization	Supports
Quick Sync video acceleration	Supports

Sources: Intel, Intel i7-1370PE Processor Specifications.

06 APPLICATIONS

From product capability to applications

Automation test control host

Hybrid core and DDR5 resources can used for test procedure, communications and result compiled etc.parallel task, PCIe expansion connect required instrument or acquisition equipment. Determine slot solution rear, should target Windows LTSC or Ubuntu environment under verification driver, scheduling and continuous load behaviour, test software responsible for specific timing control.

Edge application processing node

Uses 2.5G bE and multi group PCIe connect aggregation equipment data, can per application requires arrangement CPU task, memory cache and local storage. Dual SATA I/O suited to planning system and data media, actual processing capability should per data format and algorithm verification, not can be link rate directly calculate application throughput.

Multi video operation and imaging show

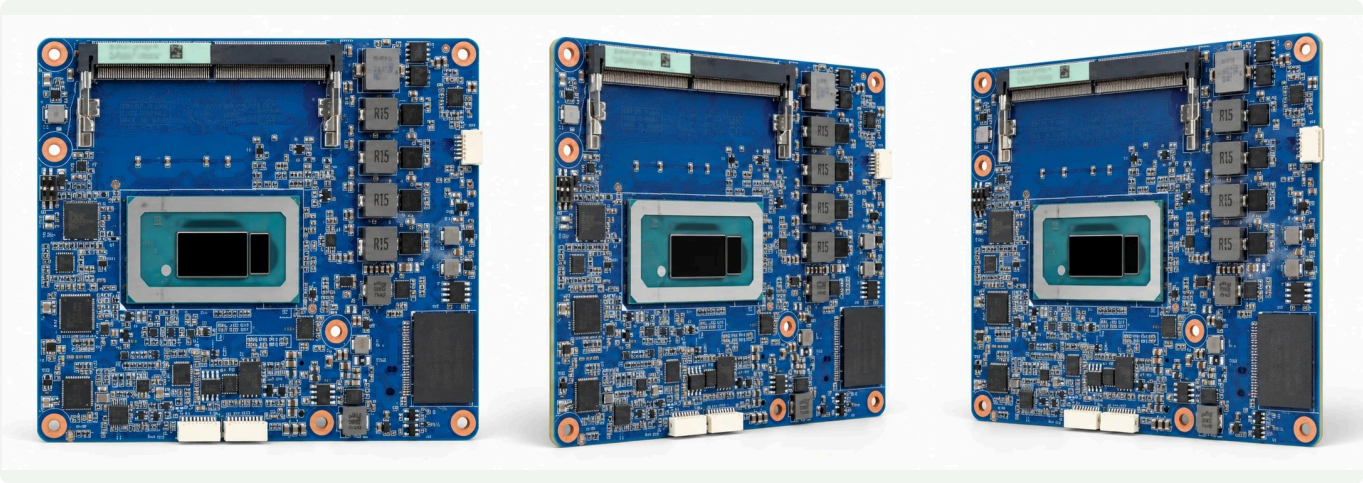
Four displays display resources can used for operator UI, trend and imaging video zone present, display unit connect should per three DDI plus eDP solution organize. Specific output combination, resolution and application graphics load required bring-up, for imaging equipment product function and industry certification must system level completes.

Integration checks

Platform memory	DDR5-4800 SO-DIMM up to 64GB; check memory item compatible, installation space and full load cooling conditions.
Expansion configured with	Gen4 x8 and 2-ch x4, default Gen3 x1 and SATA resources per actual carrier confirm, avoid ignore multiplexed conditions.
USB and display	USB4 BIOS optional configuration; confirm carrier connect and firmware supports, again check four displays 4K actual combination.
System and temperature	Standard 0–60°C and industrial–40–70°Cseparate configured with; per Windows LTSC or Ubuntu22.04 and above solution verification driver.

07 CONFIGURATION

Appearance, configuration and selection



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

Configuration

Provides standard and industrial temperature version, supports Windows LTSC and Ubuntu system, USB4 uses optional configuration.

Temperature version	Standard version 0~60°C / industrial version-40~70°C

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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