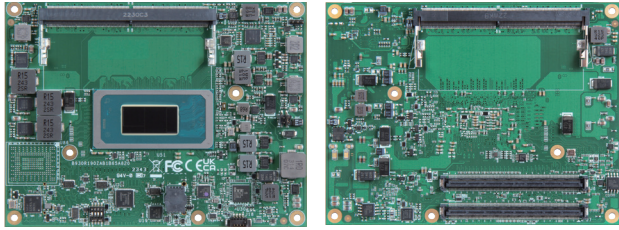


# PCOM-B65A

COM Express Type 6 Basic Size module based on Intel® Core™ Ultra Processor Series with DDR5 SO-DIMM, DDI, PCIe Gen 4, USB 3.2 Gen2, 2.5 Gigabit TSN Ethernet, discrete TPM 2.0, eDP, SATA



## FEATURES

- Intel® Core™ Ultra processors (15W~45W) on Intel® 4 lithography
- Up to 14x cores of 6x Performance-cores (P-cores) and 8x Efficient-cores (E-cores), and up to 128x graphics execution units
- 2x DDR5-5600 non-ECC SO-DIMMs up to 64GB, 1x PCIe Gen 4 x8, 2x Gen 4 x4, and 8x PCIe Gen 3 x1
- 4x USB 3.2 Gen 2, 8x USB 2.0, 4x SATA III (2x shared with PCIe lane), 3x DDI, VGA, eDP/LVDS
- Options for onboard PCIe NVMe SSD



The Portwell PCOM-B65A is a COM Express Type 6 Basic size module based on the Intel® Core™ Ultra processor platform (formerly Meteor Lake U & H series). Intel Core Ultra is the first processor built on Intel® 4 lithography process technology, and the first to use Foveros 3D advance packaging technology. With AI acceleration built into every processor integrating CPU, GPU and NPU into a single package, this leading-edge Intel processor platform offers advanced computing performance with 15W~45W base power in BGA package to deliver small/sleek form factors and fanless options. More specifically, it features an NPU, or a neural processing unit, a dedicated AI engine to run AI models at low power for greater efficiency. The Intel Core Ultra processor platform also features next-gen graphic engine, up to 8 Intel X<sup>e</sup>-cores (128EU). Furthermore, the PCOM-B65A COM Express module provides (up to) 24x PCIe Gen4 lanes, 4x USB 3.2 Gen 2, and 2x SATA. The extensive and flexible I/O expansion along with high-performance computing featuring dedicated AI acceleration capability across the CPU, GPU and NPU architectures, makes the Portwell PCOM-B65A COM Express Type 6 module suitable for a broad range of embedded applications across various industries from AI edge computing to mission critical use cases.

## General

General		
Model Name	PCOM-B65A	
Form Factor	COM Express Type 6 Basic Size (125 X 95mm)	
CPU Series	Intel® Core™ Ultra U series	Intel® Core™ Ultra H series
Cores P+E/Threads	Up to 2P + 8E/12T	Up to 6P + 8E/20T
Frequency	2.3 GHz	3.0~3.2 GHz
Turbo Frequency	Up to 4.4 GHz	Up to 5.1 GHz
Intel® Smart Cache	Up to 12 MB	Up to 24 MB
Intel® Gfx EU	Up to 64 EU	Up to 128 EU
Graphics Max Freq.	Up to 1.70 GHz	Up to 2.35 GHz
Processor TDP (Up / Nominal / Down)	15W	28W / 45W
PCH	SoC	
Memory Type/Speed	DDR5 SO-DIMM up to 64GB 5600MT/s	
ECC Memory Support	Non-ECC SO-DIMM	

## I/O Interface

I/O Interface			
SATA	4x SATA III (2x SATA shared with PCIe lane)		
USB	4x USB 3.2 Gen2 8x USB 2.0		
Ethernet	Intel® I226 series		
Serial I/O	GPIO	8 bit GPIO (default 4 input/4 output)	
	I <sup>2</sup> C	Baud Rate : 400KHz	
	SMBus	Baud Rate : 100KHz	
	UART	TX/RX signal only	
PCI Express	2x Gen4 x4		
Display	Module display interface	Carrier output options	
	eDP / LVDS (default eDP)	eDP up to HBR3	Resolution 3840 x 2160@120Hz
		LVDS (24bit, dual-channel)	1920 x 1200@60Hz
	DDI	DP up to HBR3	3840 x 2160@120Hz
		HDMI 2.1	3840 x 2160@120Hz
VGA	VGA	1920 x 1200@60Hz	
Security	TPM 2.0		

## MECHANICAL & ENVIRONMENT

Dimension	125 x 95mm
Power DC IN	Normal: +12V DC AT/ATX mode
Storage Temperature	-40°C to 85°C
Operating Temperature	0°C to 60°C
Certification	Contact us
MTBF	TBD
Vibration	TBD
OS	Windows 10/11 Ubuntu

## ORDERING GUIDE

Product	Ordering P/N	Status
PCOM-B65A-185H	In Process	In Development
PCOM-B65A-165H	In Process	In Development
PCOM-B65A-155H	In Process	In Development
PCOM-B65A-135H	In Process	In Development
PCOM-B65A-125H	In Process	In Development
PCOM-B65A-100U	In Process	In Development

Accessory	Ordering P/N	Status
Cooler (Heatpipe)	In Process	In Development
Heatsink (Heatpipe)	In Process	In Development
Heatspreader (Heatpipe)	In Process	In Development
PCOM-C605R Mini-ITX Carrier	AB1-3P78	Available
PCOM-C60B ATX Evaluation Carrier	AB1-3G22	Available

## BLOCK DIAGRAM

### PCOM-B65A

