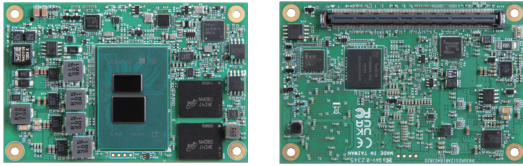


# PCOM-BA03

Intel® Atom® x7000 series SoC based on Type 10 mini COM-Express® module with LPDDR5 SDRAM



## FEATURES

- Intel Atom® processors x7000RE series (formerly Amston Lake), Intel Atom® processors x7000E series
- On board LPDDR5 SDRAM up to 16GB
- On board eMMC 32GB (up to 256GB)
- Low Power Consumption (6W to 12W), 4K Display resolution
- Support wide temperature -40°C ~ 85°C (Selected SKU)
- Support Intel® TCC/TSN with 2.5GbE (Selected SKU)



Portwell's PCOM-BA03GL, a COM Express® Type 10 Mini (84 x 55mm) module, is based on Intel Atom® processors x7000E and x7000RE series up to 8 cores and integrated GPU for AI inference and media processing, featuring LPDDR5-4800 MT/s onboard memory, turbo mode up to 3.6GHz, 2.5GbE, 4x PCIe 3.0 x1, 2x USB 3.2 Gen2, 8x USB 2.0 and 2x SATA III interfaces. It also provides LVDS support, and HDMI, eDP and DP interfaces with 4K resolution support. With low power consumption (6W to 12W), as well as support for wide voltage input from 4.75V to 20V and extended temperature from -40°C to 85°C, it delivers highly effective performance with energy efficiency. The Portwell PCOM-BA03GL enables versatile embedded computing solutions ideal for diverse applications across the industry, such as automation, military, transportation, hospitality, edge AI and more.

## General

Product	PCOM-BA03						
Form Factor	Type 10, Mini Form Factor COM-Express® ( 84 x 55 mm)						
CPU Series	Embedded E Series			Industrial RE Series			
	x7211E	x7213E	x7425E	x7211RE	x7213RE	x7433RE	x7835RE
Core	2	2	4	2	2	4	8
Frequency	1.0 GHz	1.7 GHz	1.5 GHz	1.0 GHz	2.0 GHz	1.5 GHz	1.3 GHz
Turbo Frequency	3.2 GHz	3.2 GHz	3.4 GHz	3.2 GHz	3.4 GHz	3.4 GHz	3.6 GHz
Intel® Smart Cache	6 MB						
Intel® Gfx EU	16EU	16EU	24EU	16EU	16EU	32EU	32EU
Graphics Max Freq.	1.0 GHz	1.0 GHz	1.0 GHz	800 MHz	800 MHz	800 MHz	1.0 GHz
Processor TDP	6W	10W	12W	6W	9W	9W	12W
Support Temperature	0°C to 60°C			-40°C~85°C			
PCH	SoC						
Memory (on board LPDDR5)	8GB	16GB	16GB	8GB	16GB	16GB	16GB
ECC Memory Support	In-Band ECC						
Storage (on board eMMC)	32G	32G	64G	32G	32G	64G	256G

## I/O Interface

SATA	2 x SATA III		
USB	2x USB 3.2 Gen2, 8x USB 2.0		
Ethernet	2.5GbE via 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 Gen3	4x PCIe 3.0 x1		
Display	Module display interface	Carrier output options	Resolution
	eDP / LVDS (Default LVDS)	eDP up to HBR3	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	
Security	TPM 2.0		

## MECHANICAL & ENVIRONMENT

Dimension	84 x 55 mm
Power DC IN	4.75V to 20V, AT/ATX Mode
Storage Temperature	-40°C to 85°C
Operating Temperature	0°C to 60°C -40°C to 85°C(Industrial SKU)
Certification	Contact us
MTBF	Contact us
Vibration	Contact us
OS	Windows 11 Ubuntu

## ORDERING GUIDE

Product	Ordering P/N	Status
PCOM-BA03-x7425E-16G-64G	AB1-3S29	Available
PCOM-BA03-x7211RE-8G-32G	AB1-3S41	Available
PCOM-BA03-x7213RE-16G-32G	AB1-3S43	Available
PCOM-BA03-x7433RE-16G-64G	AB1-3S44	Available
PCOM-BA03-x7835RE-16G-256G	AB1-3S42	Available
PCOM-BA03-x7211E-8G-32G	AB1-3T24	Available
PCOM-BA03-x7213E-16G-32G	AB1-3T25	Available

Accessory	Ordering P/N	Status
Heatsink (Aluminum)	B830C460	Available
Heatspreader (Aluminum)	B830C470	Available
Heatsink (Copper elastic pad)	B830C690	Available
Heatspreader (Copper elastic pad)	B830C700	Available
PCOM-CA00 (Micro-ATX Carrier board)	AB1-3917	Available

## BLOCK DIAGRAM

### PCOM-BA03

COM Express® Type 10  
Mini Module 84x55mm

