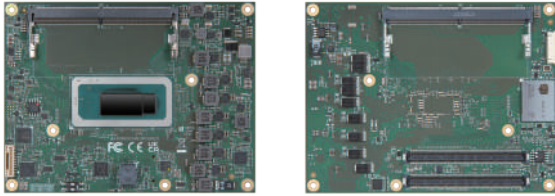


# PCOM-B658VGL

COM Express Type6 Basic size module with Intel® 12<sup>th</sup> / 13<sup>th</sup> Gen H/P/U Processor  
DDR5 SO-DIMM, DDI, PCIe Gen 4, USB4, USB 3.2 Gen2, 2.5 Gigabit TSN Ethernet, discrete TPM 2.0, eDP, SATA III



## FEATURES

- 12<sup>th</sup> / 13<sup>th</sup> Gen Intel® Core™ , Celeron® Series processors in Intel 7 lithography
- Up to 6x performance core + 8x efficient core, and up to 96x graphic execution units
- 2x DDR5-4800 non-ECC SO-DIMMs up to 2x 32GB, 1x PCIe Gen4 x8(H series), 2x Gen4 x4, and 7x PCIe Gen3 x1
- 4x USB3.2 Gen2, 8x USB2.0, 2x SATAIII, 3x DDI, VGA, eDP/LVDS, and optional 2x USB4



PCOM-B658VGL is COM Express module based on Intel® 12<sup>th</sup> / 13<sup>th</sup> Gen H/P/U platform. It is compatible with COM Express Rev3.1 standard. The platform adopt Intel 7 lithography and VNNI instruction set, offers advance computing power with 15~45W thermal and embedded use condition for wide range application. PCOM-B658VGL supports PCIe Gen4 lanes, and 2x Non-ECC DDR5 SO-DIMM, which is suit for mission critical use conditions and AI edge computing with TSN. This module also provides (up to) 7x PCIe Gen3 x1 lanes, 2x USB4(option), 4x USB 3.2 Gen 2, and 2x SATA III. The complete and flexible I/O capacity also mapped to wide range of embedded/industrial applications.

## General

Product	PCOM-B658VGL									
Form Factor	COM Express Type6 Basic Size (125 X 95mm)									
SKU Type	H series			P series			U series			
	i7-13800HE	i5-13600HE	i3-13300HE	i7-1370PE	i5-1350PE	i3-1320PE	i7-1365UE	i5-1345UE	i3-1315UE	U300E
Cores P+E/Threads	6P + 8E/20T	4P + 8E/16T	4P + 4E/12T	6P + 8E/16T	4P + 8E/16T	4P + 4E/12T	2P + 8E/12T	2P + 8E/12T	2P + 4E/8T	1P + 4E/5T
Frequency	2.5 GHz	2.7 GHz	2.1 GHz	1.9 GHz	1.8 GHz	1.7 GHz	1.7 GHz	1.4 GHz	1.2 GHz	1.1 GHz
Turbo Frequency	5.0 GHz	4.8 GHz	4.6 GHz	4.8 GHz	4.6 GHz	4.5 GHz	4.9 GHz	4.6 GHz	4.5 GHz	4.3 GHz
Intel® Smart Cache	24 MB	18 MB	12 MB	24 MB	12 MB	12 MB	12 MB	12 MB	10 MB	8 MB
Intel® Gfx EU	96 EU	80 EU	48 EU	96 EU	80 EU	48 EU	96 EU	80 EU	64 EU	48 EU
Graphics Max Freq.	1.40 GHz	1.40 GHz	1.30 GHz	1.40 GHz	1.40 GHz	1.35 GHz	1.30 GHz	1.25 GHz	1.20 GHz	1.10 GHz
Video Decode Boxes	2	2	1	2	2	1	2	2	1	1
Processor TDP	65W / 45 W / 35 W			35W / 28 W / 20W			28W / 15 W / 12W			
PCH	SoC									
ECC Memory Support	No									
BIOS	AMI BIOS									
Memory Type/Speed	DDR5 SO-DIMM up to 64GB 4800MT/s									

## I/O Interface

SATA	2x SATA III share with PCIe lane	
USB	2x USB4 (option) 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 Gen4	1x Gen4 x8 (selected SKU), 2x Gen4 x4	
PCI Express Gen3	7x Gen 3.0 x1 (2 lanes share with SATA)	

Display	Default	Options	Resolution
	eDP	eDP up to HBR3	7680 x 4320@60Hz
DDI	DP up to HBR3	7680 x 4320@60Hz	
	DP up to HBR3	7680 x 4320@60Hz	
	DP up to HBR3	7680 x 4320@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
Operation 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-B658VGL-13800HE	TBD	In Development
PCOM-B658VGL-13600HE	TBD	In Development
PCOM-B658VGL-13300HE	TBD	In Development

Product	Ordering P/N	Status
PCOM-B658VGL-1370PE	TBD	In Development
PCOM-B658VGL-1350PE	TBD	In Development
PCOM-B658VGL-1320PE	TBD	In Development
PCOM-B658VGL-1365UE	TBD	In Development
PCOM-B658VGL-1345UE	TBD	In Development
PCOM-B658VGL-1315UE	TBD	In Development
PCOM-B658VGL-U300E	TBD	In Development

Accessory	Ordering P/N	Status
Cooler	TBD	In Development
Heatsink	TBD	In Development
Heatspreader	TBD	In Development
PCOM-C605R Mini-ITX Carrier	AB1-3P78Z	In Development
PCOM-C60B ATX Evaluation Carrier	AB1-3G22	Available

## BLOCK DIAGRAM

## PCOM-B658VGL

