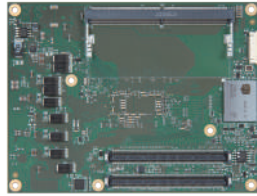
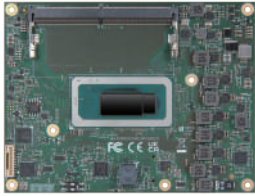


PCOM-B658VGL

COM Express Type6 Basic size module with Intel® 12th Gen H/P/U Processor
DDR5 SO-DIMM, DDI, PCIe Gen 4, USB4, USB3.2 Gen2, 2.5 Gigabit TSN Ethernet, discrete TPM 2.0, eDP, SATA III



FEATURES

- 12th 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® 12th 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 | | | |
| | i7-12800HE | i5-12600HE | i3-12300HE | i7-1270PE | i5-1250PE | i3-1220PE | i7-1265UE | i5-1245UE | i3-1215UE | Celeron 7305E |
| Cores P+E/Threads | 6P + 8E/20T | 4P + 8E/16T | 4P + 4E/12T | 4P + 8E/16T | 4P + 8E/16T | 4P + 4E/12T | 2P + 8E/12T | 2P + 8E/12T | 2P + 4E/8T | 1P + 4E/5T |
| Frequency | 2.4 GHz | 2.5 GHz | 1.9 GHz | 1.8 GHz | 1.7 GHz | 1.5 GHz | 1.7 GHz | 1.5 GHz | 1.2 GHz | 1.0 GHz |
| Turbo Frequency | 4.6 GHz | 4.5 GHz | 4.3 GHz | 4.5 GHz | 4.4 GHz | 4.2 GHz | 4.7 GHz | 4.4 GHz | 4.4 GHz | N/A |
| Intel® Smart Cache | 24 MB | 18 MB | 12 MB | 18 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. | 1.35 GHz | 1.30 GHz | 1.15 GHz | 1.35 GHz | 1.30 GHz | 1.25 GHz | 1.25 GHz | 1.20 GHz | 1.10 GHz | 1.10 GHz |
| Video Decode Boxes | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 1 |
| Processor TDP | 45 W/35 W | | | 28 W | | | 15 W | | | |
| 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® I225/I226 series | |
| Serial I/O | GPIO | 8 bit GPIO (default 4 input/4 output) |
| | I ² 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 | |
| Security | TPM 2.0 | | 7680 x 4320@60Hz |

PCOM-B658VGL

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-12800HE | TBD | In Development |
| PCOM-B658VGL-12600HE | TBD | In Development |
| PCOM-B658VGL-12300HE | TBD | In Development |

| Product | Ordering P/N | Status |
|---------------------|--------------|----------------|
| PCOM-B658VGL-1270PE | TBD | In Development |
| PCOM-B658VGL-1250PE | TBD | In Development |
| PCOM-B658VGL-1220PE | TBD | In Development |
| PCOM-B658VGL-1265UE | TBD | In Development |
| PCOM-B658VGL-1245UE | TBD | In Development |
| PCOM-B658VGL-1215UE | TBD | In Development |
| PCOM-B658VGL-7305E | 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

