

# ABP-3000 Series



8th Gen Intel® Core™ U-series Processor (Whiskey Lake)  
Ultra-slim Fanless Embedded System

- 8th Generation Intel® Core™ U-series processor (Whiskey Lake) supports up to 40% greater productivity than former generation solution
- Ultra-slim and cableless design supports wide range temperature of -40°C to 75°C with fanless operation
- 2 DDR4 2400MHz memory, up to 64GB
- Dual independent DisplayPort displays support up to 4K resolution
- 4-port USB 3.1 support up to 10Gbps data transfer
- 4 Independent GigE LAN with 2 IEEE 802.3at PoE+
- SIM Socket for 5G/WiFi/4G/3G/LTE/GPRS/UMTS
- 4 COM RS-232/422/485, 16 Isolated DIO
- 9V to 50V DC wide range Power Input
- Ignition Power Control, TPM 2.0
- Expansion : M.2 Key B, M.2 Key M, M.2 Key E and Mini PCIe
- Optional VHub One-Stop AIoT Solution Service supports OpenVINO based AI accelerator and advanced Edge AI applications

Machine Vision



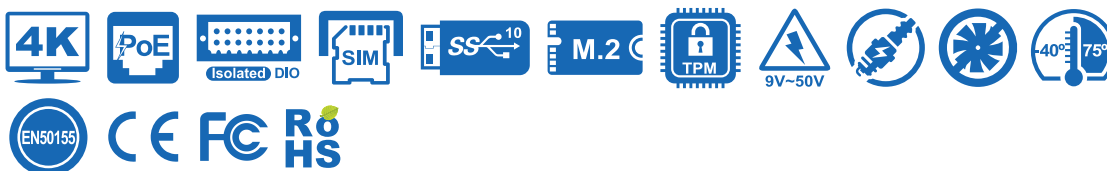
In-vehicle Computing



AMR/AGV



Intelligent Control



# Specifications

## System

|           |   |
|-----------|---|
| Processor | Quad Core Intel® Core™ i7-8665UE/i3-8145UE Processor (Whiskey Lake) |
| Chipset   | Intel® SoC (Cannon Lake)  |
| BIOS      | AMI   |
| SIO       | IT8786E   |
| Memory    | 2 DDR4 2400MHz SO-DIMM, up to 64GB                                  |
| OS        | Windows 10, Linux   |

## I/O Interface

|              |                                |
|--------------|--------------------------------|
| Serial       | 4 COM RS-232/422/485 (ESD 8kV) |
| USB          | 4 USB 3.1 (External)           |
| Isolated DIO | 16 Isolated DIO : 8 DI, 8 DO   |
| LED          | HDD, PoE+                      |
| SIM Card     | 2 Internal SIM Card Socket     |

## Expansion

|           |  |
|-----------|--|
| M.2       | - 1 M.2 Key E Socket (PCIe x1)<br>- 1 M.2 Key B Socket (PCIe x2/USB 3.1) |
| Mini PCIe | 1 Mini PCIe Socket for PCIe/USB/SIM Card                                 |

## Graphics

|                    |   |
|--------------------|---|
| Graphics Processor | Intel® UHD Graphics 620                 |
| Interface          | 2 DisplayPort : Up to 4096 x 2304 @60Hz |

## Storage

|     |  |
|-----|--|
| M.2 | - 1 M.2 Key M Socket (PCIe x4/SATA)<br>- 1 M.2 Key B Socket (PCIe x2/SATA) |
|-----|--|

## Audio

|                 |                                      |
|-----------------|--------------------------------------|
| Audio Codec     | Realtek ALC892, 5.1 Channel HD Audio |
| Audio Interface | 1 Mic-in, 1 Line-out                 |

## Ethernet

|       |   |
|-------|---|
| LAN 1 | GigE LAN by Intel® Ethernet Controller I350 |
| LAN 2 | GigE LAN by Intel® Ethernet Controller I350 |

## PoE

|       |   |
|-------|---|
| LAN 3 | GigE IEEE 802.3at (25.5W/48V) PoE+ by Intel® I350 with Power On/Off Control |
| LAN 4 | GigE IEEE 802.3at (25.5W/48V) PoE+ by Intel® I350 with Power On/Off Control |

## Power

|                  |                                     |
|------------------|-------------------------------------|
| Power Input      | 9V to 50V DC-in                     |
| Power Interface  | Mini DIN                            |
| Ignition Control | 16 Mode                             |
| Remote Switch    | 3-pin Terminal Block : On, Off, IGN |

## Others

|                |   |
|----------------|---|
| TPM            | Optional Infineon SLB9665 supports TPM 2.0, LPC Interface                     |
| Watchdog Timer | Reset : 1 to 255 sec./min. per step   |
| Smart Mgmt.    | Wake on LAN, PXE supported  |
| HW Monitor     | Monitoring temperature, voltages. Auto throttling control when CPU overheats. |

## Mechanical

|            |  |
|------------|--|
| Dimensions | 224.0mm x 149.0mm x 32.6mm (8.82" x 5.87" x 1.28") |
| Weight     | 1.4 kg (3.09 lb)                                   |

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## Environment

|                   |  |
|-------------------|--|
| Operating Temp.   | -40°C to 75°C (-40°F to 167°F)                               |
| Storage Temp.     | -40°C to 85°C (-40°F to 185°F)                               |
| Humidity          | 5% to 95% Humidity, non-condensing                           |
| Relative Humidity | 95% @75°C  |
| Shock             | - IEC 60068-2-27<br>- SSD : 50G @ wallmount, Half-sine, 11ms |
| Vibration         | - IEC 60068-2-64<br>- SSD : 5Grms, 5Hz to 500Hz, 3 Axis      |
| EMC               | CE, FCC, EN50155, EN50121-3-2                                |

## Order Information

| Model No.      | CPU            | GigE LAN (PoE+) | USB 3.1 | COM | Isolated DIO | M.2 |
|----------------|----------------|-----------------|---------|-----|--------------|-----|
| ABP-3000-8665U | Core i7-8665UE | 4 (2)           | 4       | 4   | 16           | 4   |
| ABP-3000-8145U | Core i3-8145UE |                 |         |     |              |     |

## Optional Software

|                   |                      |
|-------------------|----------------------|
| VHub AI Developer | AI Development Kit   |
| VHub ROS          | AMR Development Kit  |
| VHub EtherCAT     | I/O Control Platform |

## Accessories

|                    |   |
|--------------------|---|
| DDR4 32G           | Certified DDR4 32GB 2666MHz RAM   |
| DDR4 16G           | Certified DDR4 16GB 2666/2400/2133 MHz RAM                                    |
| DDR4 8G            | Certified DDR4 8GB 2666/2400/2133 MHz RAM                                     |
| DDR4 4G            | Certified DDR4 4GB 2666/2400/2133 MHz RAM                                     |
| PWA-120WM4P        | 120W, 24V, 90V AC to 264V AC Power Adapter with 4-pin Mini-DIN Connector      |
| M.2 Storage Module | M.2 Key M/Key B PCIe Storage Module   |
| TMK2-20P-100       | Terminal Block 20-pin to Terminal Block 20-pin Cable, 100cm                   |
| TMK2-20P-500       | Terminal Block 20-pin to Terminal Block 20-pin Cable, 500cm                   |
| TMB-TMBK-20P       | Terminal Board with One 20-pin Terminal Block Connector and DIN-Rail Mounting |
| 5G Module          | 5G Module with Antenna  |
| 4G Module          | 4G/GPS Module with Antenna  |
| WiFi & Bluetooth   | WiFi & Bluetooth Module with Antenna  |

## Dimensions & Drawing

Unit : mm (inch)

