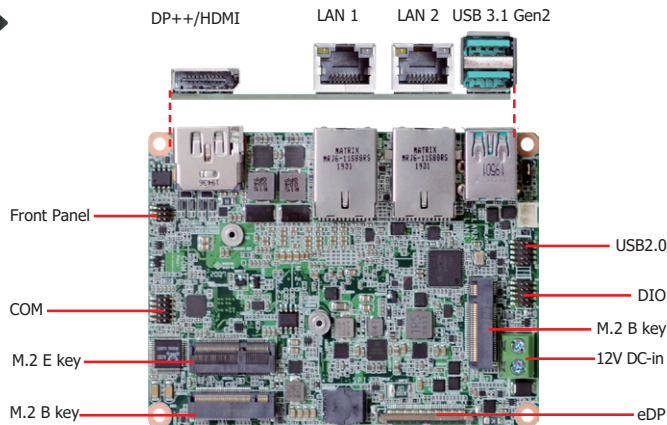
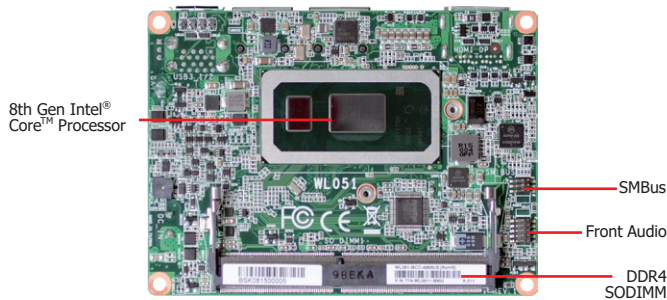


WL051



Top View



Bottom View

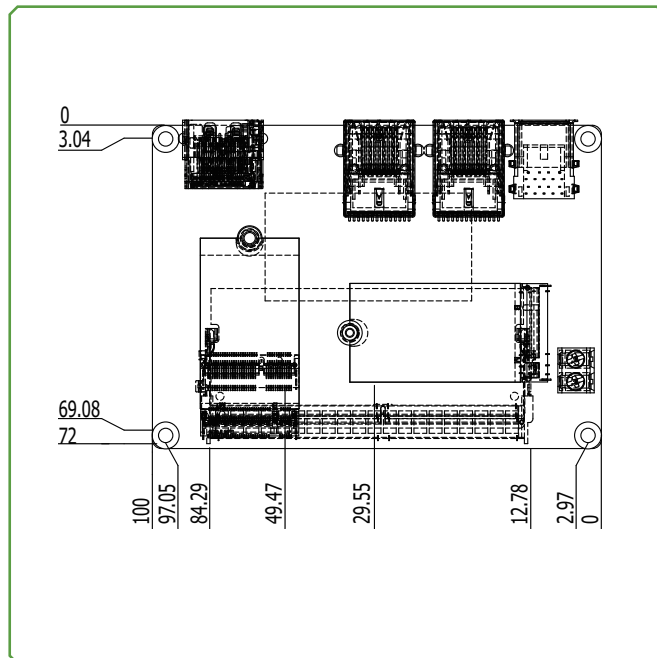
Features

- Small form factor 2.5" Pico-ITX for space-limited applications
- 1 DDR4 SODIMM up to 32GB
- Dual independent displays: DP++/HDMI + eDP
- Expansion and Storage: 1 M.2 E key, 2 M.2 B key
- Rich I/O: 2 Intel GbE, 1 COM, 2 USB 3.1 Gen 2, 2 USB 2.0

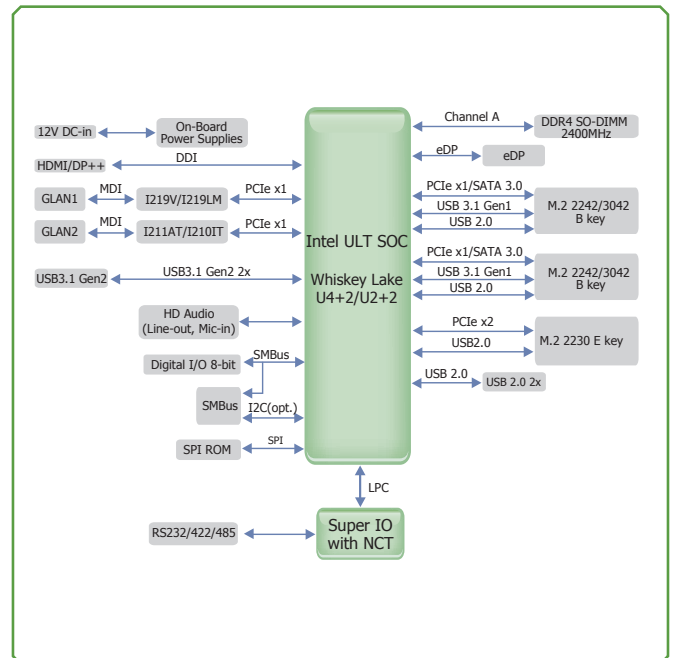
* Populated by default



Mechanical Drawing



Block Diagram



► Specifications

| | | |
|-------------------------------|------------------------------|--|
| SYSTEM | Processor | 8th Generation Intel® Core™ Processors, BGA 1528 Intel® Core™ i7-8665UE, Quad Core, 8M Cache, 1.7GHz (4.4GHz), 15W Intel® Core™ i5-8365UE, Quad Core, 6M Cache, 1.6GHz (4.1GHz), 15W Intel® Core™ i3-8145UE, Dual Core, 4M Cache, 2.2GHz (3.9GHz), 15W Intel® Core™ Celeron® 4305UE, Dual Core, 2M Cache, 2.0GHz (2.0GHz), 15W |
| | Memory | One 260-pin SODIMM up to 32GB Single Channel DDR4 up to 2400MHz |
| | BIOS | AMI SPI 128Mbit |
| GRAPHICS | Controller | Intel® UHD Graphics 620/ Intel® UHD Graphics 610 (for Celeron 4305UE) |
| | Feature | OpenGL 4.5, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: AVC/H.264, MPEG2, JPEG, HEVC/H265, VP8, VP9 |
| | Display | 1 x DP++/HDMI 1 x eDP DP++: resolution up to 4096x2304 @ 60Hz HDMI: resolution up to 4096x2160 @30Hz eDP: resolution up to 4096x2304 @ 60Hz |
| | Dual Displays | DP++/HDMI + eDP |
| EXPANSION | Interface | 1 x M.2 E key 2230 (PCIe x2/USB 2.0) 2 x M.2 B key 3042/2242 (PCIe x1 or SATA 3.0/USB 3.1 Gen1/USB 2.0) |
| AUDIO | Audio Codec | Realtek ALC262-VC2-GR |
| ETHERNET | Controller | 1 x Intel® I219V/I219LM (only Core i7/i5 supports iAMT) 1 x Intel® I211AT/I210IT |
| REAR I/O | Ethernet | 2 x GbE (RJ-45) |
| | USB | 2 x USB 3.1 Gen 2 |
| | Display | 1 x DP++/HDMI 1 x eDP |
| INTERNAL I/O | Serial | 1 x RS-232/422/485 (1.27mm pitch) |
| | USB | 2 x USB 2.0 (1.27mm pitch) |
| | Display | 1 x eDP Connector |
| | Audio | 1 x Audio (Line-out/Mic-in) |
| | DIO | 1 x 8-bit DIO |
| | SMBus | 1 x SMBus |
| WATCHDOG TIMER | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds |
| SECURITY | TPM | fTPM2.0 |
| POWER | Type | Single 12V +/-10% DC |
| | Connector | 2-pin Terminal Block |
| | RTC Battery | CR2032 Coin Cell |
| | Consumption | Typical: 8665UE:12V @ 0.51A (6.12Watt) Max.: 8665UE:12V @ 2.26A (27.12Watt) |
| OS SUPPORT (UEFI Only) | Microsoft/Linux | Windows 10 IoT Enterprise (64-bit) Linux |
| ENVIRONMENT | Temperature | Operating: -5 to 65°C, -30 to 80°C Storage: -40 to 85°C |
| | Humidity | Operating: 5 to 90% RH Storage: 5 to 90% RH |
| | MTBF | 4305UE: 564,107 hrs @ 25°C; 402,731 hrs @ 45°C ; 293,920 hrs @ 60°C; 182,929 hrs @ 80°C Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled |
| | MECHANICAL | Dimensions |
| | Height | PCB: 1.6mm Top Side: 15mm, Bottom Side: 8mm |
| CERTIFICATIONS | | CE, FCC, RoHS |

► Ordering Information

| Model Name | P/N | Processor | Memory | Display | GbE | RS-232/422/485 | USB 3.1 Gen 2 | USB 2.0 | Power | Thermal | Temp. |
|------------------|-----------------|-----------|----------|-----------------|-----|----------------|---------------|---------|-------|---------|-------------|
| WL051-BCC-8665UE | 770-WL0511-000G | i7-8665UE | 1 SODIMM | DP++/HDMI + eDP | 2 | 1 | 2 | 2 | 12VDC | Fanless | -5 to 65°C |
| WL051-BCC-8365UE | 770-WL0511-100G | i5-8365UE | 1 SODIMM | DP++/HDMI + eDP | 2 | 1 | 2 | 2 | 12VDC | Fanless | -5 to 65°C |
| WL051-BCC-8145UE | 770-WL0511-200G | i3-8145UE | 1 SODIMM | DP++/HDMI + eDP | 2 | 1 | 2 | 2 | 12VDC | Fanless | -5 to 65°C |
| WL051-BCC-4305UE | 770-WL0511-300G | 4305UE | 1 SODIMM | DP++/HDMI + eDP | 2 | 1 | 2 | 2 | 12VDC | Fanless | -5 to 65°C |
| WL051-ECC-8665UE | 770-WL0511-400G | i7-8665UE | 1 SODIMM | DP++/HDMI + eDP | 2 | 1 | 2 | 2 | 12VDC | Fanless | -30 to 80°C |
| WL051-ECC-8365UE | 770-WL0511-500G | i5-8365UE | 1 SODIMM | DP++/HDMI + eDP | 2 | 1 | 2 | 2 | 12VDC | Fanless | -30 to 80°C |
| WL051-ECC-8145UE | 770-WL0511-600G | i3-8145UE | 1 SODIMM | DP++/HDMI + eDP | 2 | 1 | 2 | 2 | 12VDC | Fanless | -30 to 80°C |
| WL051-ECC-4305UE | 770-WL0511-700G | 4305UE | 1 SODIMM | DP++/HDMI + eDP | 2 | 1 | 2 | 2 | 12VDC | Fanless | -30 to 80°C |

► Packing List

| | |
|----------------------------------|-----------------|
| • 1 WL051 board | |
| • 1 Heat spreader (Height: 11mm) | A71-808331-000G |

► Optional Items

| | |
|--|-----------------|
| • Power adapter (60W, 12V, DC Jack) | 671-106012-000G |
| • 2 pole terminal to DC Jack cable | A81-004013-000G |
| • USB 2.0 cable (Length: 200mm, 2 ports) | A81-001084-016G |
| • COM cable (Length: 300mm, 1 port) | A81-015038-016G |
| • Heat sink for -5 to 65°C (Height: 37.8mm) | A71-008153-010G |
| • Heat sink for -30 to 80°C (Height: 37.8mm) | A71-008154-000G |
| • DIO cable (Length: 160mm) | A81-009203-018G |
| • SMBus cable (Length: 240mm) | A81-009353-016G |
| • Audio cable (Length: 160mm) | A81-022013-016G |
| • Front Panel cable (Length: 200mm) | A81-020047-016G |