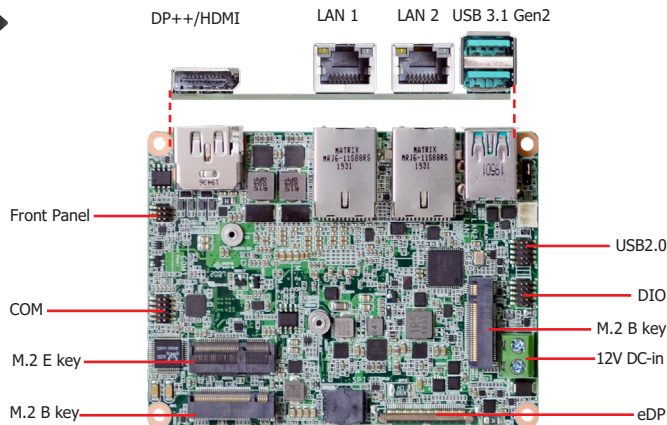
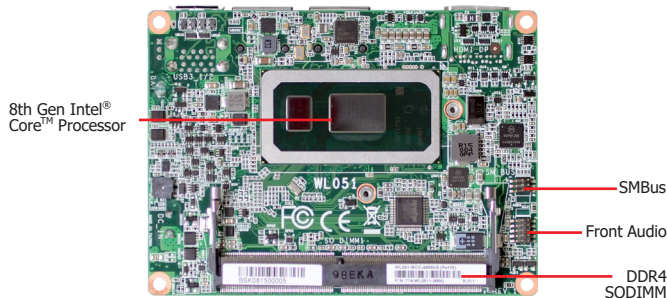


WL051



Top View



Bottom View

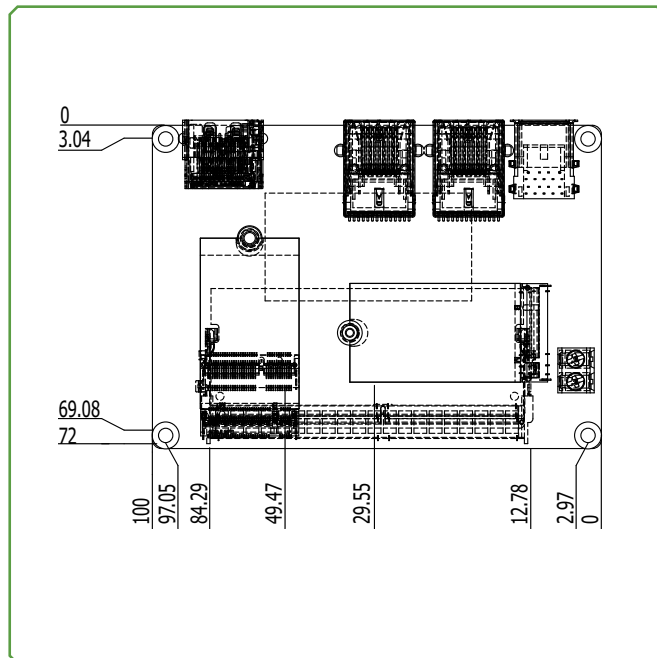
Features

- 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

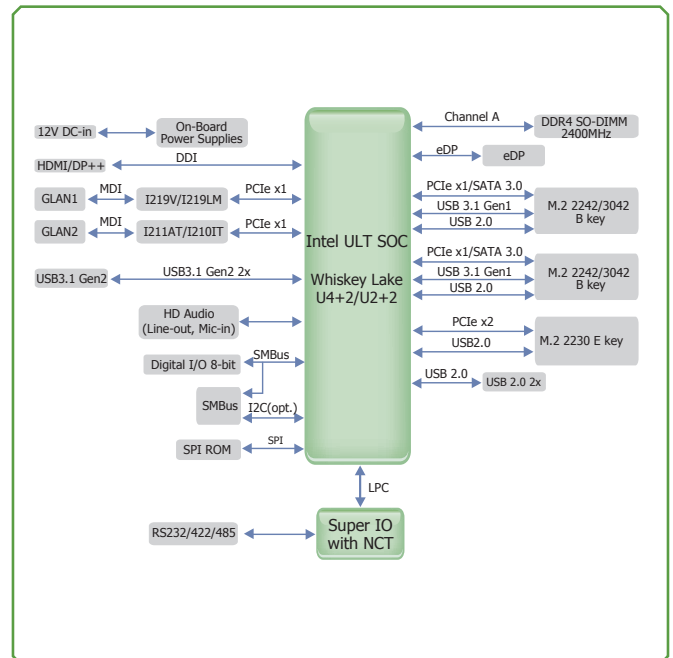
* Populated by default



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 ALC888S-VD2-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	2.5" Pico-ITX Form Factor
	Height	PCB: 1.6mm	Top Side: 15mm, Bottom Side: 8mm
CERTIFICATIONS		CE, FCC, RoHS, KC	

► 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-WL0512-000G	i7-8665UE	1 SODIMM	DP++/HDMI + eDP	2	1	2	2	12VDC	Fanless	-5 to 65°C
WL051-BCC-8365UE	770-WL0512-100G	i5-8365UE	1 SODIMM	DP++/HDMI + eDP	2	1	2	2	12VDC	Fanless	-5 to 65°C
WL051-BCC-8145UE	770-WL0512-200G	i3-8145UE	1 SODIMM	DP++/HDMI + eDP	2	1	2	2	12VDC	Fanless	-5 to 65°C
WL051-BCC-4305UE	770-WL0512-300G	4305UE	1 SODIMM	DP++/HDMI + eDP	2	1	2	2	12VDC	Fanless	-5 to 65°C
WL051-ECC-8665UE	770-WL0512-400G	i7-8665UE	1 SODIMM	DP++/HDMI + eDP	2	1	2	2	12VDC	Fanless	-30 to 80°C
WL051-ECC-8365UE	770-WL0512-500G	i5-8365UE	1 SODIMM	DP++/HDMI + eDP	2	1	2	2	12VDC	Fanless	-30 to 80°C
WL051-ECC-8145UE	770-WL0512-600G	i3-8145UE	1 SODIMM	DP++/HDMI + eDP	2	1	2	2	12VDC	Fanless	-30 to 80°C
WL051-ECC-4305UE	770-WL0512-700G	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)	A81-015050-016G
• 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)	A81-022037-016G
• Front Panel cable (Length: 200mm)	A81-020047-016G