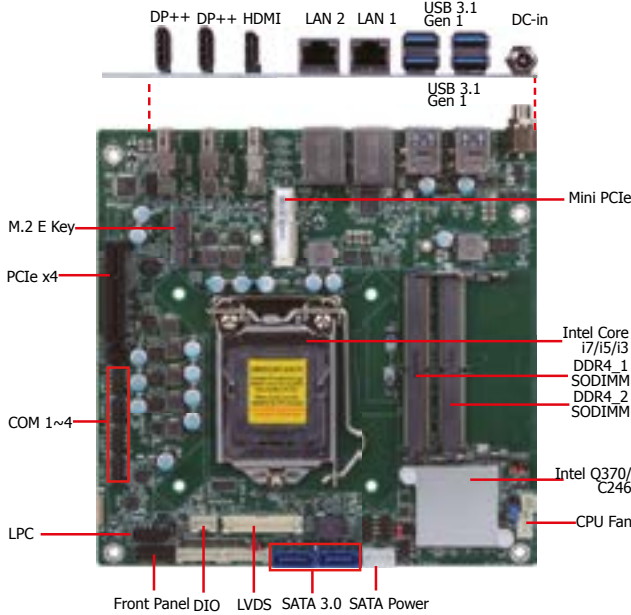


Mini-ITX Board

Desktop

Features

- 2 DDR4 2666MHz SODIMM up to 32GB
- Three independent displays: LVDS + HDMI + DP++
- DP++ resolution supports up to 4096x2304 @ 60Hz
- Multiple Expansions: 1 PCIe x4 Gen 3, 1 Full-size Mini PCIe, 1 M.2 2280 M Key, 1 M.2 2230 E Key
- Storage: 2 SATA 3.0
- Rich I/O: 2 Intel GbE, 4 COM, 4 USB 3.1 Gen 2, 4 USB 2.0

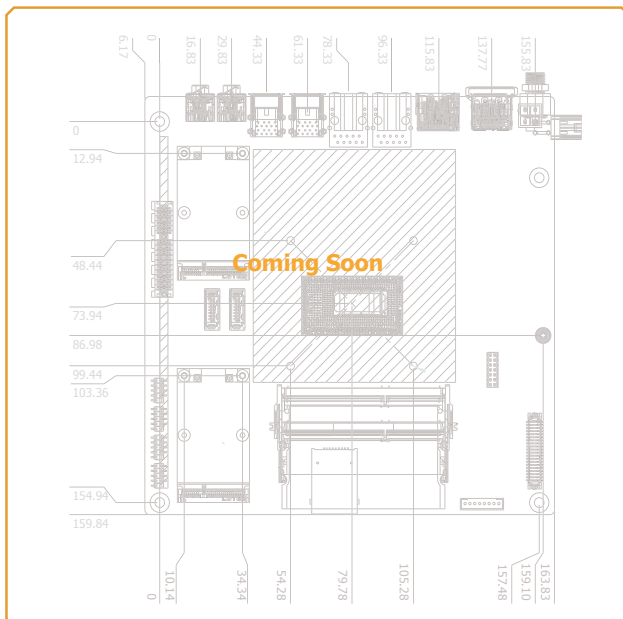


Ordering Information

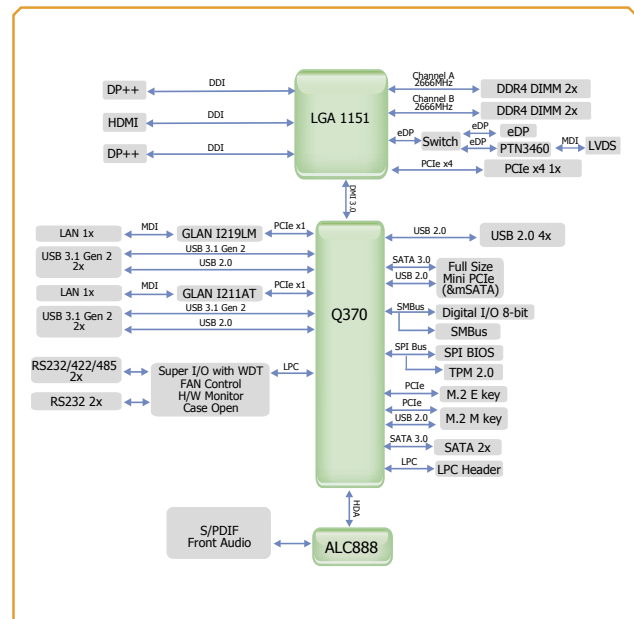
Model Name	P/N	Memory	LVDS/eDP	HDMI/DP++	GbE	RS-232	RS-232/422/485	USB 3.1 Gen 2	USB 2.0	SATA 3.0	TPM	Power	Temp.
CS101-Q370	TBD	2 SODIMM	LVDS	DP++	2	2	2	4	4	2	2.0	12V DC	0 to 60°C
CS101-C246	TBD	2 SODIMM	LVDS	DP++	2	2	2	4	4	2	2.0	12V DC	0 to 60°C

Note: If you would like to have the CPU configuration which is not listed on our ordering, please contact our sales representative.

Mechanical Drawing



Block Diagram



Mini-ITX Board

► Specifications

SYSTEM	Processor	Intel Atom® Processor E3900 Family, BGA 1296 Intel Atom® x7-E3950 Processor, Quad Core, 2M Cache, 1.6GHz (2.0GHz), 12W Intel Atom® x5-E3940 Processor, Quad Core, 2M Cache, 1.6GHz (1.8GHz), 9.5W Intel Atom® x5-E3930 Processor, Dual Core, 2M Cache, 1.3GHz (1.8GHz), 6.5W Intel® Pentium® Processor N4200, Quad Core, 2M Cache, 1.1GHz (2.5GHz), 6W Intel® Celeron® N3350, Dual core, 2M Cache 1.1GHz (2.4GHz), 6W	
	Memory	Two 204-pin SODIMM up to 8GB	Dual Channel DDR3L 1867MHz
	BIOS	SPI 64Mbit (supports UEFI boot only)	
GRAPHICS	Controller	Intel® HD Graphics GT Series	
	Feature	OpenGL 5.0, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H.265, VP8, VP9, MVC HW Encode: AVC/H.264, JPEG/MJPEG, HEVC/H.265, VP8, VP9, MVC	
	Display	1 x LVDS LCD Panel connector or 1 x eDP LCD panel connector 1 x LCD/inverter Power VGA: resolution up to 2560x1600 @ 60Hz LVDS: dual channel 48-bit, resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2160 @ 60Hz eDP: resolution up to 4096x2160 @ 60Hz	
Triple Displays	VGA + DP++ + LVDS VGA + DP++ + eDP	DP++ + DP++ + LVDS DP++ + DP++ + eDP	
EXPANSION	Interface	1 x PCIe (Gen2, signal share w/M.2) 1 x M.2 M key (support 2242/2280, PCIe&SATA signal, default SATA) 1 x Full-size Mini PCIe (PCIe2.0/USB2.0)(USB3.1 Gen 1)(opt.)	
AUDIO	Audio Codec	Realtek ALC262-VC2-GR	
ETHERNET	Controller	-40 to 85°C: 2 x Intel® I210IT PCIe (10/100/1000Mbps) or 0 to 60°C: 2 x Intel® I211AT PCIe (10/100/1000Mbps)	
REAR I/O	Ethernet	2 x GbE (RJ-45)	
	USB	4 x USB 3.0	
	Display	1 x VGA/DP++	1 x DP++
	Audio	1 x Line-out 1 x Line-in (available upon request) 1 x Mic-in	
	Serial	2 x RS-232/422/485 (RS-232 w/ power) (DB-9)	
INTERNAL I/O	Serial	4 x RS-232 (2.0mm pitch)	
	USB	6 x USB 2.0 (2.0mm pitch)	
	Display	1 x LVDS LCD Panel Connector 1 x LCD/Inverter Power 1 x eDP LCD Panel Connector	
	Audio	1 x S/PDIF	
	SATA	2 x SATA 3.0 (up to 6Gb/s) colay with M.2 M key	
	DIO	1 x 8-bit DIO	
	LPC	1 x LPC (supports LPC EXT-RS232/RS485 module)	
	SMBus	1 x SMBus	
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
SECURITY	TPM	dTPM 2.0 (opt.)	
POWER	Type	ATX	
	Connector	24-pin ATX power	
	Consumption	TDP 6~12W	
	RTC Battery	CR2032 Coin Cell	
OS SUPPORT (UEFI Only)	Microsoft/Linux	Windows 10 64bits (LTSC) Ubuntu 16.04.2	
ENVIRONMENT	Temperature	Operating: 0 to 60°C, -40 to 85°C	Storage: -40 to 85°C
	Humidity	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	MTBF	357,197 hrs @ 25°C; 206,214 hrs @ 45°C ; 130,208 hrs @ 60°C Calculation model: Telcordia Issue 2, Method I Case 3 Environment: GB, GC – Ground Benign, Controlled	
MECHANICAL	Dimensions	Mini-ITX Form Factor	170mm (6.7") x 170mm (6.7")
	Height	PCB: 1.6mm	Top Side: 38.5mm, Bottom Side: 3.00mm

► Packing List

• 1 AL170 motherboard	
• I/O shield	A49-AL1700-010G (VGA/DP++) or A49-AL1700-000G (DP++/DP++)
• Heatsink	TBD
• Serial ATA data cable (Length: 500mm)	332-553001-005G
• COM port cable (Length: 250mm, 1 x COM ports)	A81-015011-001G

► Optional Items

• COM port cable (Length: 250mm, 1 x COM ports)	A81-015011-001G
• USB 2.0 port cable (Length: 200mm)	A81-001032-016G
• LPC EXT-RS232 module (4 x RS232 ports)	770-EXTRS1-000G
• LPC EXT-RS485 module (4 x RS485 ports)	770-EXTRS1-100G
• Heat sink for E series CPU 0 to 60°C/-40 to 85°C	A71-008106-000G
• Heat sink for N series CPU 0 to 60°C	A71-008101-020G
• Serial ATA data cable (Length: 500mm)	332-553001-005G