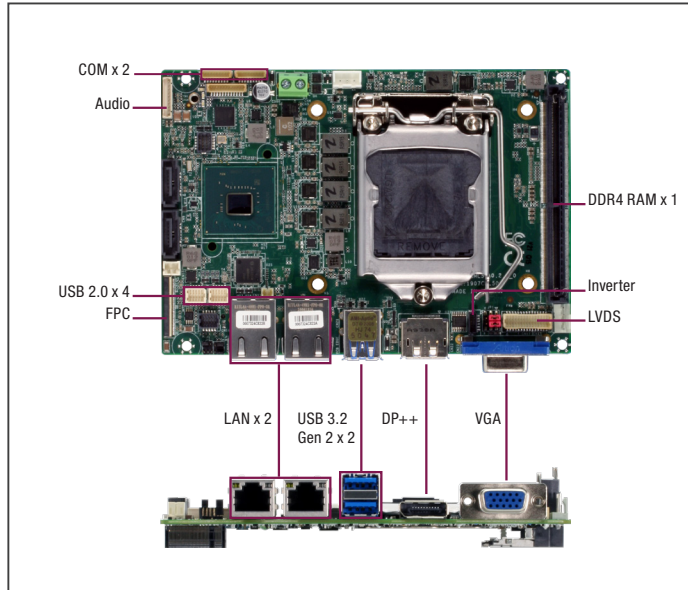


GENE-CML5

3.5" SubCompact Board with 10th Generation Intel® Core™ i7/i5/i3/Pentium®/Celeron® Processor



Specifications

SYSTEM	
FORM FACTOR	3.5" SubCompact Board
CPU	Intel® 10th Generation Core™/Pentium/Celeron processor: i7-10700TE (8C/16T, 2.00 GHz, up to 4.40 GHz, TDP-up 35W) i5-10500TE (6C/12T, 2.30 GHz, up to 3.70 GHz, TDP-up 35W) i3-10100TE (4C/8T, 2.30 GHz, up to 3.60 GHz, TDP-up 35W) G6400TE (2C/4T, 3.20 GHz, TDP-up 35W) G5900TE (2C/2T, 3.00 GHz, TDP-up 35W)
CHIPSET	Intel® Q470E / H420E / Q470
MEMORY TYPE	DDR4 up to 2933MHz Dual Channel, SODIMM x 2, up to 64GB, Non-ECC
BIOS	UEFI
WAKE ON LAN	Yes
WATCHDOG TIMER	255 Levels
SECURITY	TPM2.0
RTC BATTERY	Lithium Battery 3V/240MAH
DIMENSION	5.75" x 4" (146mm x 101.7mm)
OS SUPPORT	Windows 10 (64bit) Linux Ubuntu 20.04.1/Kernel 5.4
POWER	
POWER REQUIREMENT	+12V
POWER SUPPLY TYPE	AT/ATX
CONNECTOR	Phoenix 2-pin Connector
POWER CONSUMPTION	Intel® i7-10700TE, DDR4 3200Mhz 32GB x2, 5.64A @ +12V(Typical) Intel® i7-10700TE, DDR4 3200Mhz 32GB x2, 10.63A @ +12V(Max)
DISPLAY	
CONTROLLER	Intel® HD Graphics 610/630
LVDS/eDP	LVDS Dual Channel 18/24bit x 1, up to 1920 x 1080
DISPLAY INTERFACE	DP++ x 1, up to 4K x 2K VGA x 1, up to 1920 x 1200
MULTIPLE DISPLAY	3 Simultaneous Displays
AUDIO	
CODEC	Realtek ALC897/892
AUDIO INTERFACE	Line-in/Line-out/MIC
SPEAKER	—
EXTERNAL I/O	
ETHERNET	Intel® i210/i211, 10/100/1000Base, RJ45 x1 Intel® i219, 10/100/1000Base, RJ45 x1 (Support Vpro only with i5/i7 + Q470/Q470E variant)
USB	USB3.2 Gen 2 x 2 (Gen 2 for Q470/Q470E only)
SERIAL PORT	—
VIDEO	DP++ x 1, VGA x 1
INTERNAL I/O	
USB	USB2.0 x 4

Features

- Intel® Core™ i7/i5/i3/Pentium®/Celeron® Processor
- Non-ECC DDR4 SODIMM Slot x 2, up to 64GB
- DP++ x 1, VGA x 1, LVDS x 1
- GbE x 2, SATA III x 2, DIO x 8bit
- USB 3.2 Gen 2 x 2 (Rear I/O), USB 2.0 x 4 (Pin header)
- RS-232/422/485 x 2
- M.2 M Key 2280 PCIe[x4]/SATA[x1] x 1
- PCIe[x4] x 1 (through Flexible Printed Circuit interface, Q470/Q470E only)



SERIAL PORT	COM1, COM2 (RS232/422/485, supports 5V/12V/RI)
VIDEO	LVDS x 1
SATA	SATA III x 2 +5V SATA Power Connector x 1
AUDIO	Audio Header x 1
DIO/GPIO	8-bit
SMBus/I2C	I2C/SMBus x 1 (Default: I2C)
TOUCH	—
FAN	4pins Smart Fan x1
SIM	—
FRONT PANEL	HDD LED, PWR LED, Power Button, Buzzer, Reset
OTHERS	FPC x 1 (For Q470/Q 470E only)
EXPANSION	
Mini PCI-E/mSATA	—
M.2	M-Key 2280 x 1 (PCIe x4, SATA)
OTHERS	—
ENVIRONMENT & CERTIFICATION	
OPERATING TEMP.	32°F ~ 140°F (0°C ~ 60°C)
STORAGE TEMP.	-40°F ~ 176°F (-40°C ~ 80°C)
OPERATING HUMIDITY	0% ~ 90% relative humidity, non-condensing
MTBF (HOURS)	380,571
EMC	CE/FCC Class A

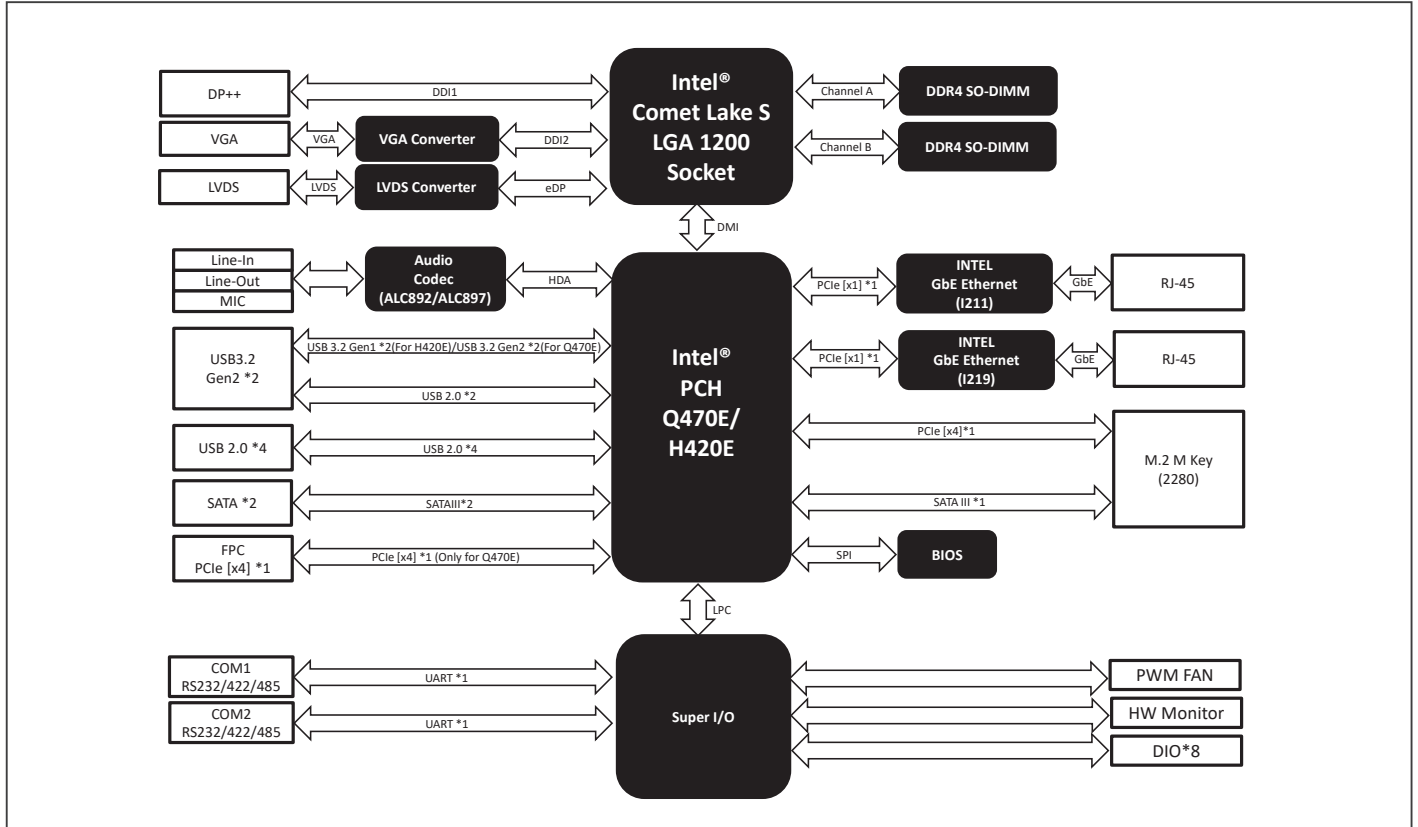
Optional Accessories

Part Number	Description	QTY per Board
1709070460	SATA Cable, W/LOCK, 46cm	2
1702150155	Power Cable, 15cm	1
170010010D	USB Cable, 10cm	2
1701090122	COM Cable, 12cm	2
1709100254	Audio Jack Cable, 25cm	1

Packing List

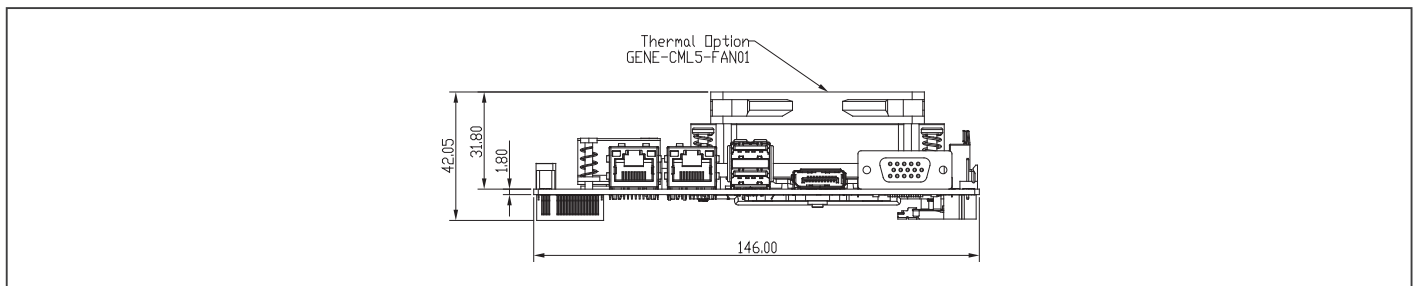
Part Number	Description	QTY
GENE-CML5	GENE-CML5 MB	1
TH1CML5010	CPU Cooler	1
TH6CML5010	CPU Cooler Backplate	2

Block Diagram



Dimension

Unit: mm



Ordering Information

Part Number	CPU	PCH	Display	LAN	USB	RS-232/422/485	Storage	Expansion slot	TPM	Power	Operating Temp
GENE-CML5-A10-0011	FCLGA1200 (Socket Type, TPD up to 35W)	Q470E	DP++ x1 VGA x 1	GbE x 2	USB3.2 Gen2 x 2 USB2.0 x 4	2	SATA x 2	M.2 2280 M Key x 1 PCIe[x4] x 1 (FPC)	TPM2.0	12V	0°C ~60°C
GENE-CML5-A10-0012	FCLGA1200 (Socket Type, TPD up to 35W)	H420E	DP++ x1 VGA x 1	GbE x 2	USB3.2 Gen2 x 2 USB2.0 x 4	2	SATA x 2	M.2 2280 M Key x 1	TPM2.0	12V	0°C ~60°C