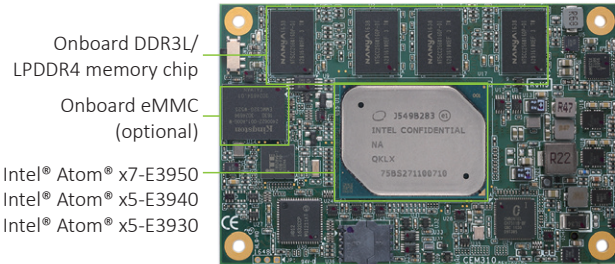


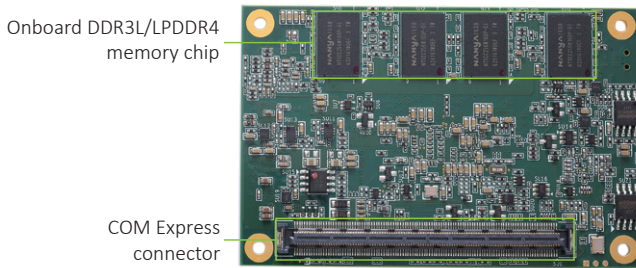
# CEM310

COM Express Type 10 Mini Module with Intel Atom® x5 and x7 Processor



## Features

- Intel Atom® x5 and x7 processors (Apollo Lake)
- 4GB DDR3L / 8GB LPDDR4 memory onboard
- Max. up to 4 lanes of PCI Express
- 2 SATA-600
- 2 USB 3.0 and 8 USB 2.0



▲ Rear view

## Specifications

### Core System

CPU	Intel Atom® x7-E3950 (2.0 GHz) Intel Atom® x5-E3940 (1.8 GHz) Intel Atom® x5-E3930 (1.8 GHz)
System Memory	4GB DDR3L memory onboard 8GB LPDDR4 memory onboard
Chipset	SoC integrated
BIOS	AMI UEFI BIOS (Legacy Free)
Storage	eMMC 5.0 up to 64GB (optional)
Watchdog Timer	65536 levels, 0 to 65535 sec.
Expansion Interface	4 x PCIe x1 (3 x1 while internal LAN is connected)
Battery Lithium	N/A
Power Input	ATX: +12V, +5VSB AT: +12V Wide range input: +4.75V to +20V

### Display

Chipset	Intel® Gen 9 Graphics Engine Supports Gfx – DX12.0, OCL2.0, OGL 4.3
Display Interface	1 x DDI (DisplayPort, HDMI, DVI) 1 x LVDS; 18/24-bit single channel (eDP optional)

## I/O

SATA	2 x SATA-600
Hardware Monitoring	Yes
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® i210-IT; supports Wake-on-LAN, PXE Boot ROM
Audio	HD link interface to baseboard for Codec
USB	2 x USB 3.0 8 x USB 2.0
Serial	1 x LPC 1 x SPI 2 x TX/RX
TPM	N/A
SMBus	Yes
Others	1 x I <sup>2</sup> C
GPIO	4-CH in & 4-CH out
Smart Battery	Yes

## Mechanical and Environmental

Dimensions	84 x 55 mm
Board Thickness	2.0 mm
Operating Temperature	Industrial: -40°C to +85°C (-40°F to +185°F) with system thermal solution Standard: -20°C to +70°C (-4°F to +158°F)
Humidity	10%- 95% relative humidity, non-condensing
Vibration Endurance	3.5 Grms

## Packing List

Quick installation guide

## Ordering Information

### Standard

CEM310PG-E3930+4GB (Ind) (P/N: E38D310100)	COM Express Type 10 Mini module with Intel® Atom® x5-E3930, DDI, LVDS, USB 3.0, and GbE LAN (Ind. Temp)
CEM310PG-E3940+4GB (Ind) (P/N: E38D310102)	COM Express Type 10 Mini module with Intel® Atom® x5-E3940, DDI, LVDS, USB 3.0, and GbE LAN (Ind. Temp)
CEM310PG-E3950+4GB (Ind) (P/N: E38D310103)	COM Express Type 10 Mini module with Intel® Atom® x7-E3950, DDI, LVDS, USB 3.0, and GbE LAN (Ind. temp)
CEM310PG-E3930+4GB (P/N: E38D310104)	COM Express Type 10 Mini module with Intel® Atom® x5-E3930, DDI, LVDS, USB 3.0, and GbE LAN
CEM310PG-E3940+4GB (P/N: E38D310105)	COM Express Type 10 Mini module with Intel® Atom® x5-E3940, DDI, LVDS, USB 3.0, and GbE LAN
CEM310PG-E3950+4GB (P/N: E38D310106)	COM Express Type 10 Mini module with Intel® Atom® x7-E3950, DDI, LVDS, USB 3.0, and GbE LAN
CEM310-D3C-P1G (P/N:E38D310110)	COM Express Type 10 Mini module with Intel® Atom® x7-E3950, DDI, LVDS, USB 3.0, and GbE LAN LPDDR4 8GB eMMC 64GB (Ind. Temp)
CEM310-F2B-P1G (P/N:E38D310111)	COM Express Type 10 Mini module with Intel® Atom® x7-E3930, DDI, LVDS, USB 3.0, and GbE LAN LPDDR4 4GB eMMC 32GB (Ind. Temp)

### Optional

7128D310000E	CEM310 heatspreader
5078D840200E + 7128D310000E	Heatsink with fan (cooler + heatspreader)
CEB94017 (P/N: E394017101)	COM Express Type 10 development baseboard

## Block Diagram

