

## CMCR1ABB - NUC Rugged Chassis Element

### Modular Customization

Intel® NUC Elements are an entirely new way to design and build embedded solutions and Mini PCs. Compute module options along with a series of Intel-designed components, deliver the flexibility of modular computing letting you create the exact systems you want. Intel NUC Elements include compute module and chassis module options, allowing you to develop innovative solutions. Start with a compute module with the exact processor you need and plug it into your choice of chassis module. By transforming how systems can be built and serviced, Intel is once again revolutionizing computing in order to help you succeed. From embedded deployments to rugged systems in unique environments, to full systems in a business or vertical environment, the Intel NUC Elements let you deliver custom solutions with minimal R&D time.

### Rugged Features

Intel® NUC 8 Rugged is a modular PC kit that's small in size but not on toughness or reliability. It features a fanless, ventless design to minimize particle intrusion, so it's built to survive environments most PCs can't - from a busy factory floor to a dusty warehouse. And even without a fan, it can operate in temperatures from 0-40°C to thrive in severe in-the-field conditions. And with the compute modules, systems are scalable from Celeron all the way up to Core i7 with vPro.

### Build embedded Solutions

Housed in a small, quiet, fanless chassis that's slim enough to fit almost anywhere, the NUC 8 Rugged can be easily integrated into digital solutions. The two chassis options provide flexibility in usage, and are qualified for 24/7 operation, making it the ideal PC solution to keep edge analytics, digital signage, or surveillance cameras up and running around the clock. All modules carry a 3-year warranty, for performance that's designed to last.

### Highlighted features

- Intel® NUC Compute Module U-Series (Required)
- Fanless, dust-proof chassis with I/O Board installed; preliminary IP50 rating
- Dual Intel® Gigabit LAN
- 128GB M.2 SSD (4TB Max, Select Processors 64GB eMMC Storage)
- Intel® Optane™ Memory ready
- Dual HDMI 2.0a with built-in CEC
- Intel® Dual Band Wireless-AC
- Intel® Bluetooth 5
- Three USB 3.1 gen 2 ports
- Two RS232 Serial port headers
- Qualified for 24x7 operation
- Delayed AC start; DC overvoltage Protection
- EDID emulation
- RP-SMA Dual-Band Antennas
- 19V DC Jack (12-24v operation)

### Customization

- Intel® NUC Compute Module
- Dual M.2 22x80 key M slots for 2x PCIe x4 NVMe, or 1x NVMe and 1x SATA SSD



### Simply NUC Services

You can order this NUC in your various configurations, as well as your corporate OS Image loaded and ready to deploy.



## Chassis Technical Specifications

### Storage Capabilities

- 128GB M.2 SATA pre-installed.
- Primary M.2 M Key socket supporting 22x80 M.2 NVMe or SATA III SSD
- Secondary M.2 M Key socket supporting 22x80/42 M.2 NVMe (2TB SATA or NVMe SSD Max.)
- Intel® Optane™ Memory H10 With Solid State Storage ready

### Audio

- Up to 7.1 multichannel (or dual 8-channel) digital audio via HDMI

### Hardware Management Features

- Trusted Platform Module (TPM) 2.0
- AMT supported Ethernet Controller
- Voltage and temperature sensing
- ACPI-compliant power management control

### Peripheral Connectivity

- Intel® i219-LM Gigabit LAN w/ AMT Support; 2nd Intel® i211-AT GbE LAN
- Three Super-Speed USB 3.0 ports (one on front panel and two on back panel)
- One Super-Speed USB 3.0 via internal header
- One USB 2.0 port
- Two internal USB 2.0 via internal header (replaced with 2x backpanel USB 2.0 ports)
- Intel® Dual Band Wireless-AC 9560 (802.11ac), 2x2, up to 867 Mbps
- Dual Mode Bluetooth 5
- Wireless 802.11ac + BT 5 Radio is Disableable for security.
- Two RS232 serial port headers
- Front panel header (with Vcc5/1A, 5Vsby2A, 3.3Vsby/1A)

### Video Ports

- Two HDMI 2.0a ports with CEC
- 4-lane eDP

### Front Panel Header

- Power LEDs, power on/off

### Expansion Capabilities

- One Internal USB 3.0 port via a 1x10 header (for optional IO)
- One AUX\_PWR connector
- One Consumer Electronics Control header

### Baseboard Power Requirements

- 19V, 90W AC-DC power adapter with detachable power cord.
- US Cord included, others available

### Mechanical Chassis Information

- 10" x 6" x 1.4" (254 x 152.4 x 36 mm, plus additional 4.8mm of rubber feet height)
- VESA Mount Kit (Plate and Screws) mechanical support for power supply adapter
- 1.9kg (4.2lbs) Fully-Assembled with Antennas (no power adapter)

## Certification and Regulations

### Product Safety Regulations and Standards

- IEC 60950-1
- UL 60950-1
- EN 60950-1
- CAN/CSA-C22.2 No. 60950-1

### Environment Operating Temp

- 0° C to +40° C
- Non-condensing Humidity

### Storage Temperature

- -20° C to +70° C

### EMC/RF Regulations and Standards (Class B)

- CISPR 52
- FCC CFR Title 47, Chapter I, Part 15, Subparts B, C, E
- ICES-005
- EN 55052
- ETSI EN 500 528
- ETSI EN 501 489-17
- EN 62511
- AS/NZS 2772.2
- VCCI V-2, V-5, V-4
- KN-52
- CNS 15458
- EN 55024
- ETSI EN 501 489-1
- ETSI EN 501 895
- AS/NZS 4268
- KN-24

### Environmental Regulations

- RoHS Directive 2011/65/EU
- WEEE Directive 2012/19/EU
- China RoHS

### Certified Operating Systems

- Windows 10 64-bit (Pro & Home)
- Windows 10 IoT Enterprise - (64-bit only) CBB and LTSC
- Windows Server 2016
- Various Linux including: Ubuntu, Mint, openSUSE, etc (Contact Simply NUC for specifics)

## CM8xCB - Intel® NUC8 Compute Module

### Modular Customization

Intel® NUC Elements are an entirely new way to design and build embedded solutions and Mini PCs. Compute module options along with a series of Intel-designed components, deliver the flexibility of modular computing letting you create the exact systems you want. Intel NUC Elements include compute module and chassis module options, allowing you to develop innovative solutions. Start with a compute module with the exact processor you need and plug it into your choice of chassis module. By transforming how systems can be built and serviced, Intel is once again revolutionizing computing in order to help you succeed. From embedded deployments to rugged systems in unique environments, to full systems in a business or vertical environment, the Intel NUC Elements let you deliver custom solutions with minimal R&D time.

### Build Scalable Modular Solutions

Housed in a tiny encapsulated board, the compute module provides many options that allow you to scale up from entry to high performance solutions, all with the same chassis module design. The seven compute module options provide scalability in performance from Celeron up to Core i7 with vPro, and are qualified for 24/7 operation, making it the ideal modular solution to keep edge analytics, digital signage, or surveillance cameras up and running around the clock. And from generation to generation, Intel is committed to preserve the form factor and pin-out of the compute module for upgradability in existing chassis modules. All modules carry a 3-year warranty, for performance that's designed to last.

### Highlighted features

- Intel® NUC Compute Element (U-Series)
- Intel® HD Graphics 610/620
- 4GB-8GB DDR4 (Soldered Down)
- Select SKUs with 64GB eMMC Storage (Pentium and Celeron SKUs only)
- Intel® Dual Band Wireless-AC
- Intel® Bluetooth 5
- Windows 10 & Linux operating Systems Supported
- Support for up to triple 4k@60Hz Displays (DDI plus eDP interfaces)
- Generation agnostic heat-spreader Thermal interface
- Supports integration into both stationary and mobile designs
- Qualified for 24x7 operation
- Three-year Product Life Cycle
- Extended warranty options (5-, 3-, 1-year)

### Customization

- Wide selection of 8th Gen Intel® Processors

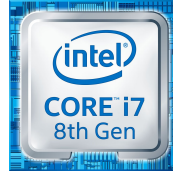


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## Compute Element Specifications



### Intel® NUC 8 Compute Element (U-Series)

- 8th Generation Intel® Core™ i7-8665U (CM8v7CB)  
1.9 GHz – 4.8 GHz Turbo, 4 Core, 8 Thread, 8MB Cache, 15W  
Intel® vPro™ Technology, Intel® AMT, TPM 2.0, 8GB LPDDR3  
Intel® UHD Graphics 620, 300 MHz - 1150 MHz
- 8th Generation Intel® Core™ i7-8565U (CM8i7CB)  
1.8 GHz – 4.6 GHz Turbo, 4 Core, 8 Thread, 8MB Cache, 15W,  
8GB LPDDR3, Intel® UHD Graphics 620, 300 MHz - 1150 MHz
- 8th Generation Intel® Core™ i5-8365U (CM8v5CB)  
1.6 GHz – 4.1 GHz Turbo, 4 Core, 8 Thread, 6MB Cache, 15W  
Intel® vPro™ Technology, Intel® AMT, TPM 2.0, 8GB LPDDR3  
Intel® UHD Graphics 620, 300 MHz - 1100 MHz
- 8th Generation Intel® Core™ i5-8265U (CM8i5CB)  
1.6 GHz – 3.9 GHz Turbo, 4 Core, 8 Thread, 6MB Cache, 15W,  
8GB LPDDR3, Intel® UHD Graphics 620, 300 MHz - 1100 MHz
- 8th Generation Intel® Core™ i3-8145U (CM8i3CB)  
2.1 GHz – 3.9 GHz Turbo, 2 Core, 4 Thread, 4MB Cache, 15W,  
4GB LPDDR3, Intel® UHD Graphics 620, 300 MHz - 1000 MHz
- Intel® Pentium® Gold 5405U (CM8PCB)  
2.3 GHz, 2 Core, 4 Thread, 2MB Cache, 15W, 4GB LPDDR3  
Intel® UHD Graphics 610, 300 MHz - 950 MHz, 64GB eMMC
- Intel® Celeron® 4305U (CM8CCB)  
2.2 GHz, 2 Core, 2 Thread, 2MB Cache, 15W, 4GB LPDDR3  
Intel® UHD Graphics 610, 300 MHz - 900 MHz, 64GB eMMC

### Family Features

- Intel® Wireless-AC 9560 soldered-down, 802.11ac 2x2 1.73Mbps + Bluetooth® 5
- 4 to 8GB soldered-down, dual-channel Memory
  - Core i7 and Core i5 SKUs – 8GB LPDDR3
  - Core i3, Pentium, and Celeron SKUs – 4GB LPDDR3
- Pentium® and Celeron® with 64GB eMMC Storage
- Windows 10 & Linux operating systems supported
- Support for up to triple 4k@60Hz displays (dual DDI plus eDP interfaces)
- Generation agnostic heat-spreader thermal interface
- Supports integration in to both stationary and mobile system designs
- Module dimensions: 95 x 65 x 6 mm
- No moving parts
- Qualified for 24x7 operation
- Three Year Product Life Cycle
- Three Year Warranty

#### I/O Support by Element

- 4 - USB 3.1
- 3 - USB 2.0
- 2 - DDI (configurable as DP/HDMI)
- 1 - eDP
- 1 - GbE PHY
- 1 - PCIe x4/SATA
- 1 - PCIe x4
- 1 - HD Audio
- 1 - eSPI (EC Interface)

#### System Bios

- Advanced configuration and power interface V3.0b, SMBIOS2.5
- Intel® Visual BIOS
- Intel® Express BIOS update Support
- Windows 10 & Linux operating systems supported

#### Hardware Management Features

- Trusted Platform Module (TPM) 2.0
- AMT supported Ethernet Controller
- Voltage and temperature sensing
- ACPI-compliant power management control

#### Dimensions

- 3.7" x 2.5" x .2" (95 x 65 x 6 mm)
- no moving parts

## Certification and Regulations

### Product Safety Regulations and Standards

- IEC 60950-1
- UL 60950-1
- EN 60950-1
- CAN/CSA-C22.2 No. 60950-1

### Environment Operating Temp

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