Intel® NUC P14E Laptop Element

CMCN1CC

Product Specification

Version 1.0

Regulatory Model Name: CMCN1CC

July 2021

Intel® BKCMCN1CC may contain design defects or errors known as errata that may cause the product to deviate from published specifications. Current characterized errata, if any, are documented in this Product Specification.

Revision History

Revision	Revision History	Date
1.0	First Release	July 2021

Disclaimer

This product specification applies to only the standard Intel® NUC P14E Laptop Element BKCMCN1CC with a BIOS identifier that starts with EBTGLXXX.XXX.

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Intel® NUC P14E Laptop Element BKCMCN1CC Identification Information

BKCMCN1CC Identification Information

SA Revision	Product Code	Original BIOS Revision	Notes
K95289-501	BKCMCN1CC1DU1		1
M32989-501	BKCMCN1CC1DU4		1
M32991-501	BKCMCN1CC1DU6		1
K95290-501	BKCMCN1CC1DJ9		1
K95291-501	BKCMCN1CC1DK3		1
K95292-501	BKCMCN1CC1DG2		1
K95297-501	BKCMCN1CC1DI2		1
M32975-501	BKCMCN1CC1DF2		1
M32978-501	BKCMCN1CC1DN2		1
M32980-501	BKCMCN1CC1DL1		1

Notes:

1. The SA number is found on the back cover.

Specification Changes or Clarifications

The table below indicates the Specification Changes or Specification Clarifications, if any, that apply to BKCMCN1CC.

Specification Changes or Clarifications

Date	Type of Change	Description of Changes or Clarifications

Errata

Current characterized errata, if any, will be documented in a separate section of this Product Specification.

Preface

This Product Specification specifies the layout, components, connectors, power and environmental features for the Intel® NUC P14E Laptop Element BKCMCN1CC.

Intended Audience

This document is intended to provide technical information about the Intel® NUC P14E Laptop Element and its components to the vendors, system integrators, and other engineers and technicians who need this level of information. It is specifically *not* intended for general audiences.

What This Document Contains

Chapter	Description
1	A description of the Intel® NUC P14E Laptop Element features
2	A technical description of the Intel® NUC P14E Laptop Element

Typographical Conventions

This section contains information about the conventions used in this specification. Not all these symbols and abbreviations appear in all specifications of this type.

Notes, Cautions, and Warnings

NOTE

Notes call attention to important information.

CAUTION

Cautions are included to help you avoid damaging hardware or losing data.

Other Common Notation

#	Used after a signal name to identify an active-low signal (such as USBP0#)
GB	Gigabyte (1,073,741,824 bytes)
GB/s	Gigabytes per second
Gb/s	Gigabits per second
KB	Kilobyte (1024 bytes)
Kb	Kilobit (1024 bits)
kb/s	1000 bits per second
MB	Megabyte (1,048,576 bytes)
MB/s	Megabytes per second
Mb	Megabit (1,048,576 bits)
Mb/s	Megabits per second
TDP	Thermal Design Power
Xxh	An address or data value ending with a lowercase h indicates a hexadecimal value.
x.x V	Volts. Voltages are DC unless otherwise specified.
*	This symbol is used to indicate third-party brands and names that are the property of their respective owners.

Contents

Figures

Tables

1 Product Description

1.1 Overview

The Intel® NUC P14E Laptop Element is a premium anodized aluminum, thin and light ultraportable business laptop designed as a chassis solution for the Intel® NUC Compute Element.

The Intel® NUC P14E Laptop Element requires a compatible Intel® NUC Compute Element in order to operate. For more information on compatible devices for use with the Intel® NUC P14E Laptop Element see https://www.intel.com/NUCElements.

NOTE

The Intel® NUC 8 Compute Element (CM8PCB, CM8CCB, CM8i3CB, CM8i5CB, CM8i7CB, CM8v5CB, CM8v7CB) is not supported with the Intel® NUC P14E Laptop Element.

NOTE

The Intel® NUC P14E Laptop Element has been certified for use as a component in Information Technology Equipment in certain countries. The system integrator is responsible for testing and acquiring any additional country specific regulatory approvals, including all system wide certifications.

NOTE

This document is based on an ANSI US language keyboard layout with a US Type B AC power cord. In addition to this configuration, other keyboard layouts, keyboard languages and AC power cord options are available. See Section 2.3 and Section 2.6 respectively for more information.

To find information about...	Visit this Internet site:
Available configurations	http://ark.intel.com
Intel® NUC Compute Element	https://www.intel.com/NUCElements
Intel® NUC Compute Element Warranty Information	https://www.intel.com/NUCWarranty
Intel Processors	http://www.intel.com/processors
Intel Graphics	http://www.intel.com/graphics
Intel HD Audio	http://www.intel.com/content/www/us/en/products/docs/chipsets/high-definition-audio.html
Intel Wireless	http://www.intel.com/wireless
Intel Technologies	http://www.intel.com/technology

1.2 Feature Summary

Table 2 summarizes the major features of the Intel® NUC P14E Laptop Element.

Table 1. BKCMCN1CC Feature Summary

Feature	Description
Color	Dark Gray
Materials	Anodized Aluminum
Processor	As provided with the Intel® NUC Compute Element
Memory	As provided with the Intel® NUC Compute Element
Graphics	As provided with the Intel® NUC Compute Element
Storage	1 M.2 22x80 PCIe x4 Gen4 NVMe (Single-sided only)
Display Panel	IPS LCD 13.9", 10-point touch, 3:2 aspect ratio, 3000x2000 pixel, 60Hz, LED backlight
Display Outputs	1 DisplayPort 1.4a (Thunderbolt™ 4) via USB Type C 1 Full Size HDMI 2.0b Output, HDCP 2.3 1 DisplayPort 1.4a via Mini DP
Audio	Realtek* ALC274-X with Intel® HD Audio Intel® Smart Sound Technology 1 3.5mm Headset Audio Jack
Speakers	2 Built In, 2W each
Microphones	4 Digital Microphones
Keyboard	Silent Membrane with backlight, 1.2mm travel
Pointing Device	Glass Touch/Click Pad with Microsoft Precision Touchpad Driver Support Enable/Disable option with LED indicator
Camera	HD RGB+IR with Windows Hello Support with camera privacy door
Fingerprint Reader	Touch type
Network	Wireless LAN: As provided with the Intel® NUC Compute Element Wired LAN: Intel® Ethernet Connection I219-LM
Power Supply	USB-C PD 20V, 65W 100/240V AC 50/60Hz
Battery	77Whr (5000mAh) with Fast Charge Support
Power, Charging and Battery LED	Power On: White, Power Off: Off Charging (Power On): Breathing White Charging (Power Off): Breathing White Battery Low (<=20%): Amber Charging Finish (w/AC): In S0: White, In S5: Off
Front Light Bar	Alexa enabled RGB
USB	2 USB 3.2 (Gen 2) x1 Type A 1 Type C Thunderbolt™ 4 (USB 4/DP 1.4a)
Size	304mmx230mmx16.5mm (without feet) to 18.8mm (with feet)
Weight (without Intel® NUC Compute Element)	1.5kg ± 0.075kg
Security	1 Kensington* NanoSaver Lock
Advanced Technologies Supported	Intel® Speed Shift Technology Intel® Turbo Boost Technology 2.0 Intel® Hyper-Threading Technology Intel® Virtualization Technology (VT-x) Intel® Virtualization Technology for Directed I/O (VT-d) Intel® Deep Learning Boost (Intel® DL Boost) Intel® SSE4.1, Intel® SSE4.2, Intel® AVX2, Intel® AVX-512 Thermal Monitoring Technologies
Security and Reliability	Intel® AES New Instructions Intel® Boot Guard Intel® OS Guard Intel® Platform Trust Technology (Intel® PTT) Mode-based Execute Control (MBE) Intel® Control-Flow Enforcement Technology

Feature	Description
Operating Systems Supported (64-bit only)	Windows* 10 Pro, Windows* 10 Home
OS Features	NUC Software Studio, NUC Audio Studio, Windows Hello Support, Voice Assistant Support for Alexa and Cortana. Support for Modern Standby.
Connector Supported	Lotes APCI0468-P001A01 Edge Mount Connector
Business Rugged MIL-STD-810H Testing	Ruggedness and reliability testing for drop, shock, dust, vibration, high and low temperature, altitude, thermal shock, and solar radiation

2 Technical Reference

2.1 Block Diagrams

Figure 1 is a block diagram of the major functional areas of the Intel® NUC P14E Laptop Element.

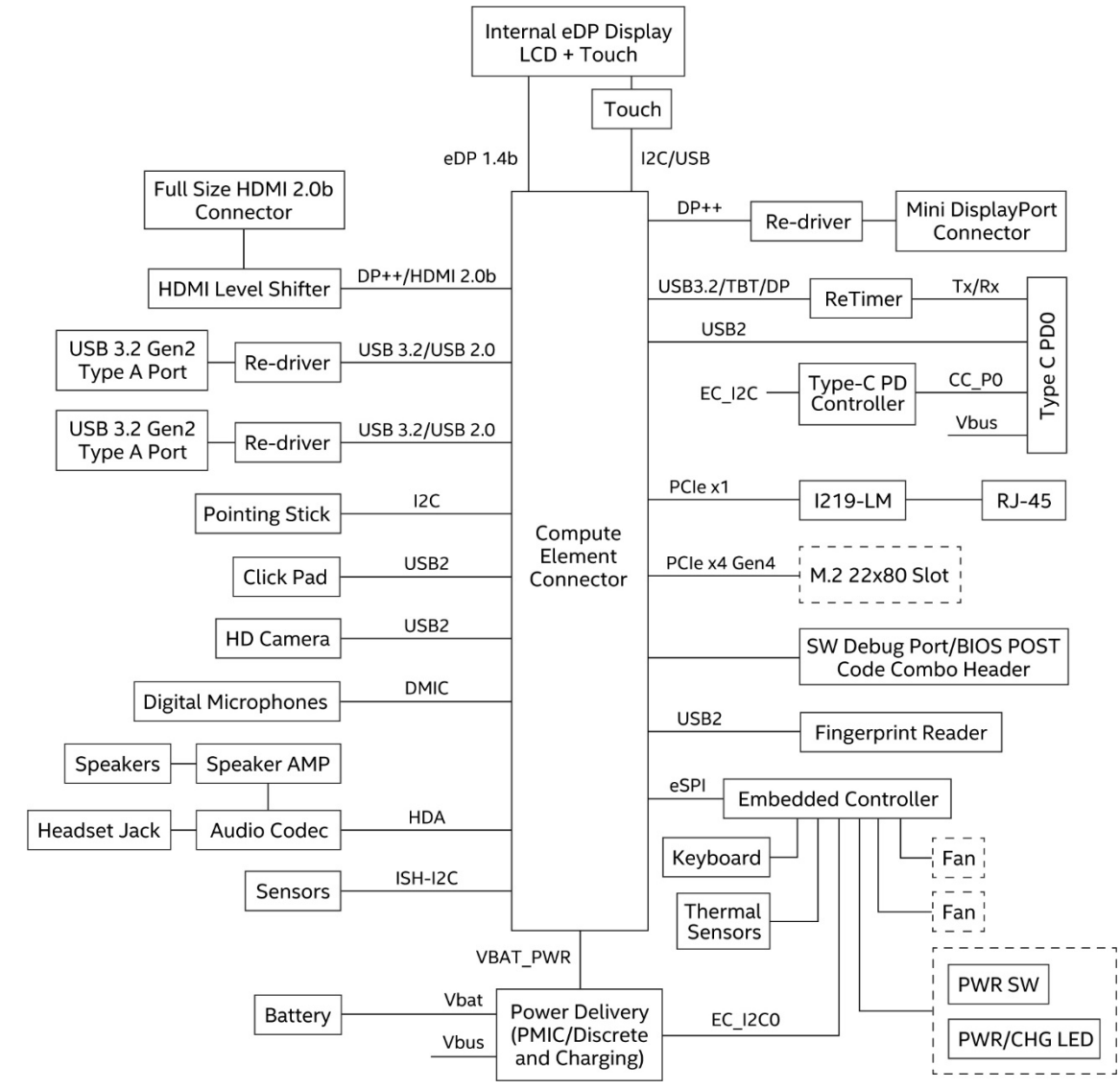

Figure 1. BKCMCN1CC Block Diagram

2.2 Exterior Features

The following figures show the exterior features for the laptop.

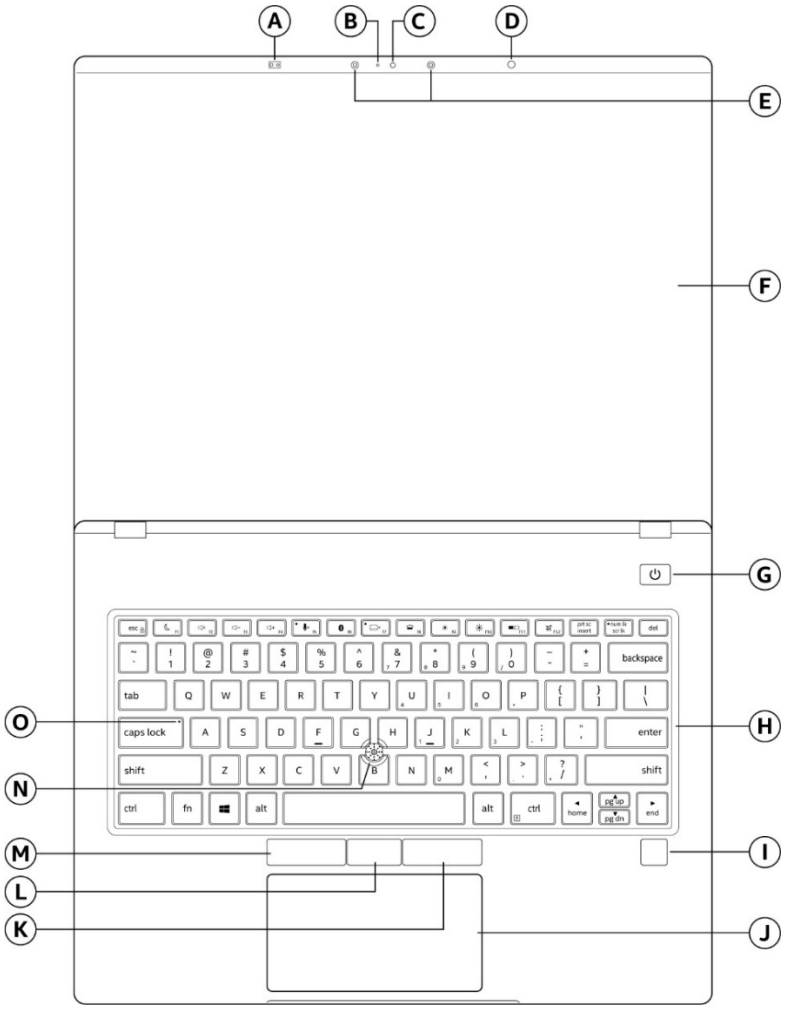

Figure 2. Top-Open Features

Table 2. Top-Open Features

Feature	Description	Feature	Description	Feature	Description
A	Time of Flight Sensor	F	Display	K	Trackpoint Right
B	Camera Status LED	G	Power Button[1]	L	Trackpoint Scroll
C	Camera with privacy door	H	Keyboard[2]	M	Trackpoint Left
D	Ambient Light Sensor	I	Fingerprint Reader	N	Track Point
E	Infrared LED	J	Touchpad/Clickpad	O	Caps Lock Status Indicator

1. The power button incorporates a power and battery status LED. See Section 2.8 for power button behavior.
2. United States ANSI keyboard shown. Other keyboard layouts and languages are available. See Section 2.3.

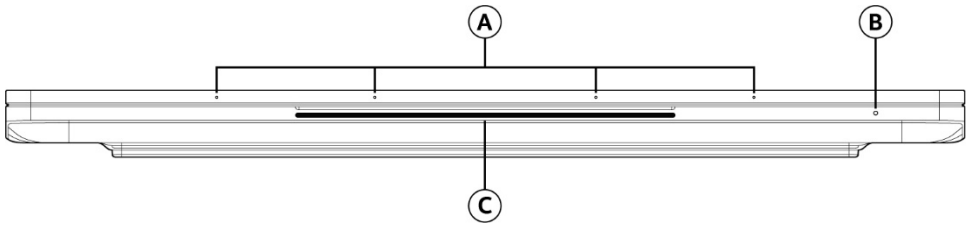

Figure 3. Front Features

Table 3. Front Features

Feature	Description	Feature	Description
A	Digital Microphones	C	RGB Light Bar
B	Power/Battery Indicator LED		

Table 4. Power/Battery Status Indicator States

Laptop Power Status	Powered On	Modern Standby	Hibernate	Powered Off
AC and Charging	White Breathing			
AC NOT Charging	White Solid	Off		
Battery	White Solid	Off		
Battery Low	Amber	Amber	Off	

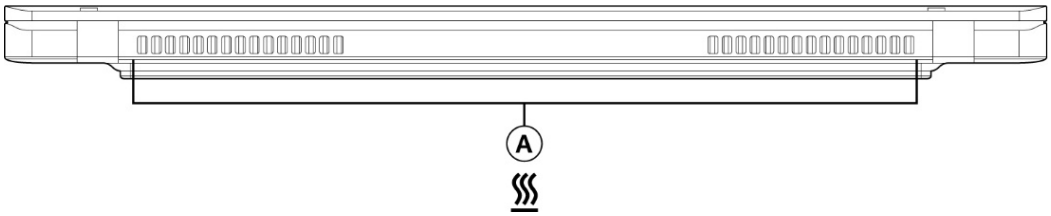

Figure 4. Back Features

Table 5. Back Features

Feature	Description
A	Air Vents

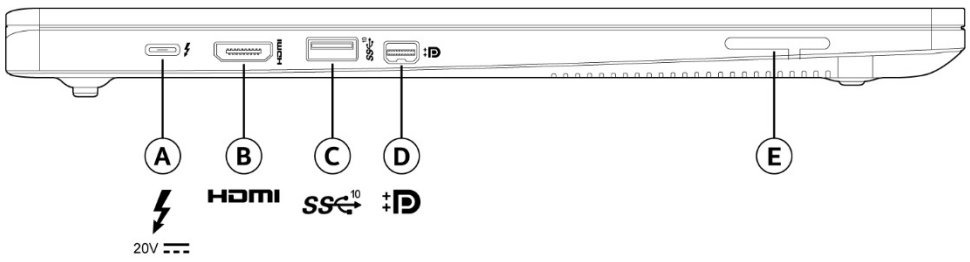

Figure 5. Left Features

Table 6. Left Features

Feature	Description	Feature	Description
A	Thunderbolt™ 4 Port/Power Connector	D	Mini DisplayPort 1.4a Connector
B	HDMI 2.0b Port	E	Wireless Antenna
C	USB 3.2 Gen 2 Type A Port		

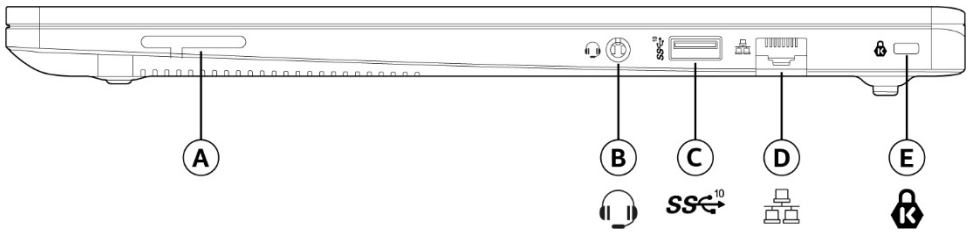

Figure 6. Right Features

Table 7. Right Features

Feature	Description	Feature	Description
A	Wireless Antenna	D	Ethernet Port
B	Headset Jack	E	Kensington NanoSaver Lock
C	USB 3.2 Gen 2 Type A Port		

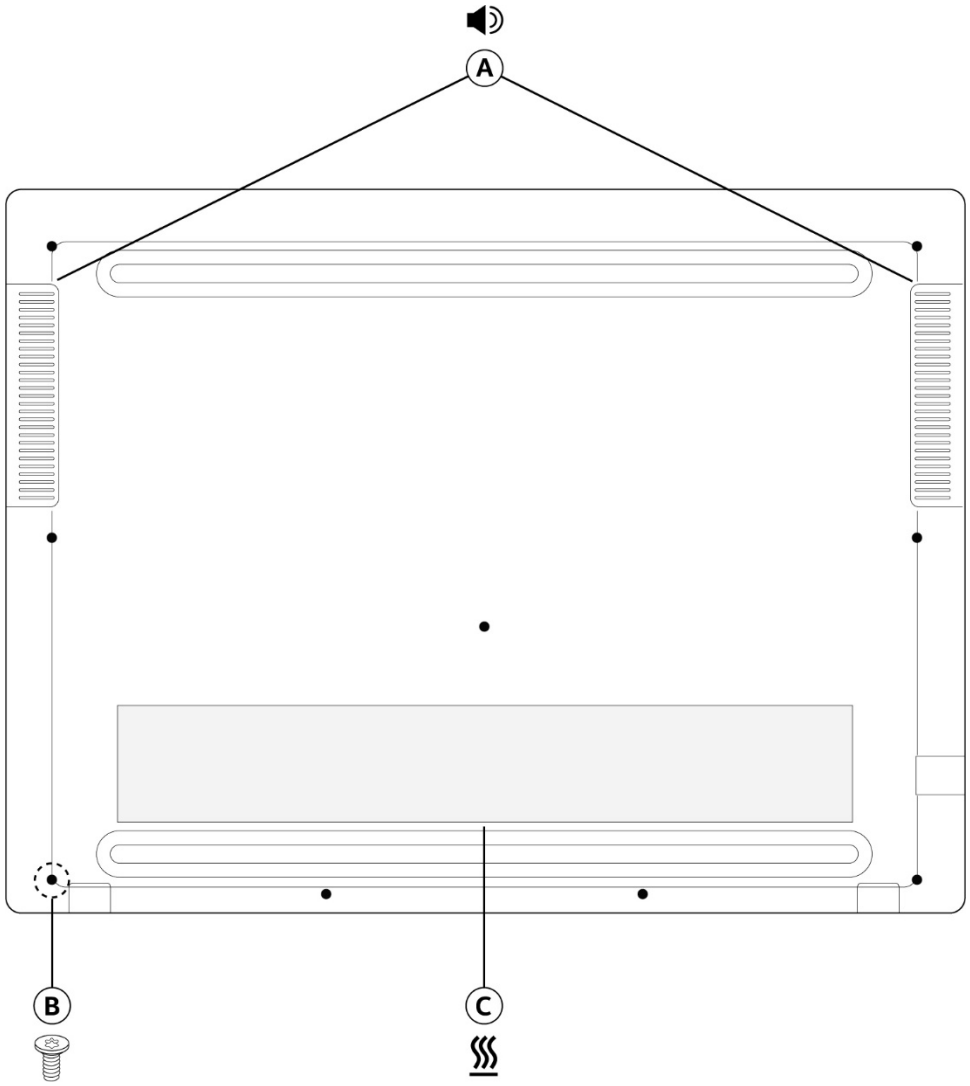

Figure 7. Bottom Features

Table 8. Bottom Features

Feature	Description
A	Speakers
B	Back Cover Screws
C	Vents

2.3 Keyboard

In addition to the ANSI US language keyboard shown in this specification, the following keyboard layouts and languages are available with the Intel® NUC P14E Laptop Element BKCMCN1CC. Check with an Intel representative for order codes and availability.

Table 9. Keyboard Layout and Language Options

Product Code	Keyboard Layout	Keyboard Language
BKCMCN1CC1DU1	ANSI	US English
BKCMCN1CC1DJ9	JIS	Japanese
BKCMCN1CC1DK3	ISO	UK English
BKCMCN1CC1DG2	ISO	German
BKCMCN1CC1DI2	ISO	Italian
BKCMCN1CC1DF2	ISO	French
BKCMCN1CC1DN2	ISO	Nordic
BKCMCN1CC1DL1	ISO	Spanish (LAR)
BKCMCN1CC1DU4	ANSI	US English
BKCMCN1CC1DU6	ANSI	US English

2.4 External Graphics

Maximum Supported Resolutions

- HDMI 2.0b – 3840x2160 48-60 Hz 24 bpp (RGB/YUV444) or 3840x2160 48-60 Hz 12 bpp (YUV420)
- DisplayPort* 1.4a via Thunderbolt™ 4 Port – 5K @ 60 Hz

2.5 Storage

The following storage interface options are supported via one M.2 2280 (key type M) connector:

- Gen 4 PCIe x4 AHCI, NVMe port is reserved for the M.2 storage module supporting M.2 2280 (key type M) module. M.2 SATA SSD modules are not supported.

2.5.1 AHCI Mode

Intel® NUC P14E Laptop Element BKCMCN1CC supports AHCI storage mode.

NOTE

In order to use AHCI mode, AHCI must be enabled in the BIOS. Microsoft Windows* 10 includes the necessary AHCI drivers without the need to install separate AHCI drivers during the operating system installation process; however, it is always good practice to update the AHCI drivers to the latest available by Intel.*

2.6 Power Adapter

All versions of the laptop ship with a 20V, 65W 100/240V AC 50/60Hz power adapter with a USB Type C DC connector. In addition to the Type B AC power cord referenced in this specification, the following AC power cords are available. Check with an Intel representative for order codes and availability.

- Type A
- Type G
- Type F
- Type I

2.7 Thunderbolt™ 4

Thunderbolt™ 4 is supported with up to 40 Gbps of data throughput, USB 4 connection, charging output capabilities up to 5V at 3A and 9V at 2A via the USB Type C connector. Maximum graphics output supported is 5K@60Hz.

2.8 Power Button Behavior

There are two behaviors when pressing the power button.

1. A short press will power the system on.
2. A long press (>three seconds and then release) will power the system on to the BIOS Boot Menu.

2.9 Environmental

Table 12 lists the environmental specifications for the Intel® NUC P14E Laptop Element.

Table 10. Environmental Specifications

Parameter	**Specification**	
Temperature		
Non-Operating	-20 °C to +60 °C	
Operating	-5 °C to +40 °C	
Shock		
Unpackaged	200g half sinusoid waveform	
	2ms, 1 shock per face, 6 times in total	
Packaged	Product Weight (pounds)	Free Fall (inches)
	<20	36
	≥20 to <40	30
	≥40 to <80	24
	≥80 to <100	18
Vibration		
Unpackaged	5 Hz to 500 Hz, 2.2Grms	
	60 minutes per each axis (X, Y, Z)	

Parameter	Specification
Packaged	5 Hz to 40 Hz: 0.015 g^2 Hz (flat)
	40 Hz to 500 Hz: 0.015 g^2 Hz sloping down to 0.00015 g^2 Hz

Note: Before attempting to operate this product, the overall temperature of the product must be above the minimum operating temperature specified. It is recommended that the product temperature be at least room temperature before attempting to power on the product. The operating and non-operating environment must avoid condensing humidity.

CAUTION

To reduce the possibility of heat-related injuries or of overheating the computer, do not place the computer directly on your lap or obstruct the computer air vents. Use the computer only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or rugs or clothing, to block airflow. Also, do not allow the AC adapter to come into contact with the skin or a soft surface, such as pillows or rugs or clothing, during operation. The computer and the AC adapter comply with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC 62368-1).

3 Characterized Errata

This section of the document communicates product Errata for the Intel® NUC P14E Laptop Element.

Errata are design defects or deviations from current published specifications for a given product. Published errata may or may not be corrected. Hardware and software designed to be used with any given processor stepping must assume that all errata documented for that process stepping are present on all devices.

There are no characterized errata currently.