

# NUC 1100 Series Product Launch Webinar



**iBOX 1100 Series**



**NUC 1100 Motherboard Series**



**NUC 1100 BOX Series**



## Intel Tiger Lake-UP3 CPU


- Up to DDR4-3200
- PCIe Gen 4 interface
- Intel® Iris® Xe Graphics, up to 96EU
- Quad-Display 4K@60Hz
- Intel® DL Boost for AI acceleration



Feature	11 <sup>th</sup> Gen Tiger Lake	8 <sup>th</sup> Gen Whiskey Lake	Advantage of 11 <sup>th</sup> Gen
Lithography	10nm SuperFin	14nm	<ul style="list-style-type: none"> <li>• Low power consumption</li> <li>• Increase Efficiency</li> <li>• Extreme performance advancement</li> </ul>
DRAM Freq.	Up to <b>DDR4-3200</b>	Up to DDR4-2400	
PCIe Interface (CPU)	<b>Gen 4</b>	Gen 3	
Graphics	<b>Intel® Iris® Xe Graphics</b>	Intel® UHD Graphics 620	
Graphics EU / Freq.	<b>Up to 96EU / 1.35 GHz</b>	Up to 24EU / 1.15 GHz	
Display Output	<b>Quad-Display 4K@60Hz</b>	Triple-Display 4K	
New AI Tech.	<b>Intel® Deep Learning Boost</b>	N/A	

# Performance Comparison



Spec / Benchmark	Whisky Lake-U <b>i7-8665UE</b>	Tiger Lak-U <b>i5-1145G7E</b>	Tiger Lake-U <b>i7-1185G7E</b> 	Performance Increase (%)
Base / Turbo Freq.	1.7 / 4.4 GHz	1.5 / 4.1 GHz	1.8 / 4.4 GHz	
CPU Cores / Threads	4 / 8	4 / 8	4 / 8	
DRAM Frequency	<b>DDR4-2400</b>	<b>DDR4-3200</b>	<b>DDR4-3200</b>	
GPU Frequency / EU	1.15 GHz / <b>24 EU</b>	1.30 GHz / <b>80 EU</b>	1.35 GHz / <b>96 EU</b>	
Cinebench R20	<b>971</b>	<b>1944</b>	<b>2056</b>	<b>112% ▲</b>
3DMark Fire Strike	<b>1228</b>	<b>2394</b>	<b>4677</b>	<b>281% ▲</b>
PCMark 10 Gaming	<b>1019</b>	<b>1969</b>	<b>3931</b>	<b>286% ▲</b>

## ◆ Advantage of TGL-U Processor

Performance: **TGL-U i5** is better than **WHL-U i7** CPU (Up to 100%)

Graphics Performance: **TGL-U** is enhanced significantly (Up to 280%)

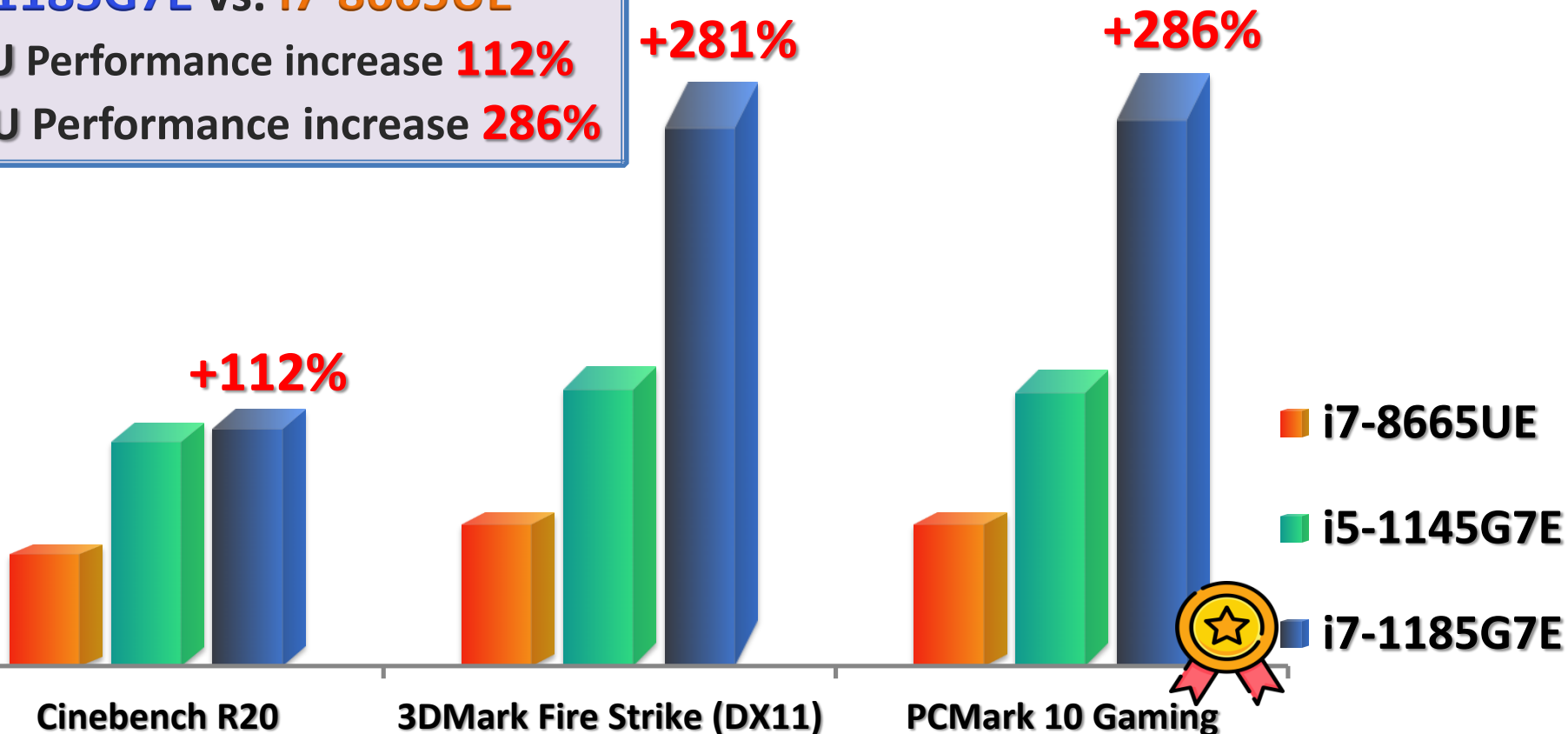
# Performance Comparison



**i7-1185G7E vs. i7-8665UE**

CPU Performance increase **112%**

GPU Performance increase **286%**



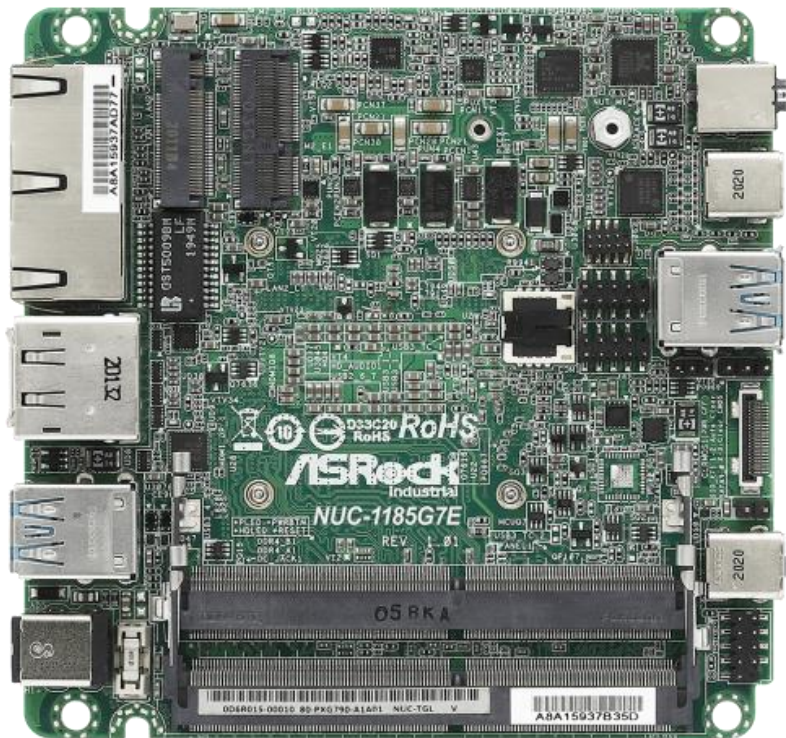
\*Performance (%) compare with i7-8665UE CPU

# Tiger Lake Product Lineup



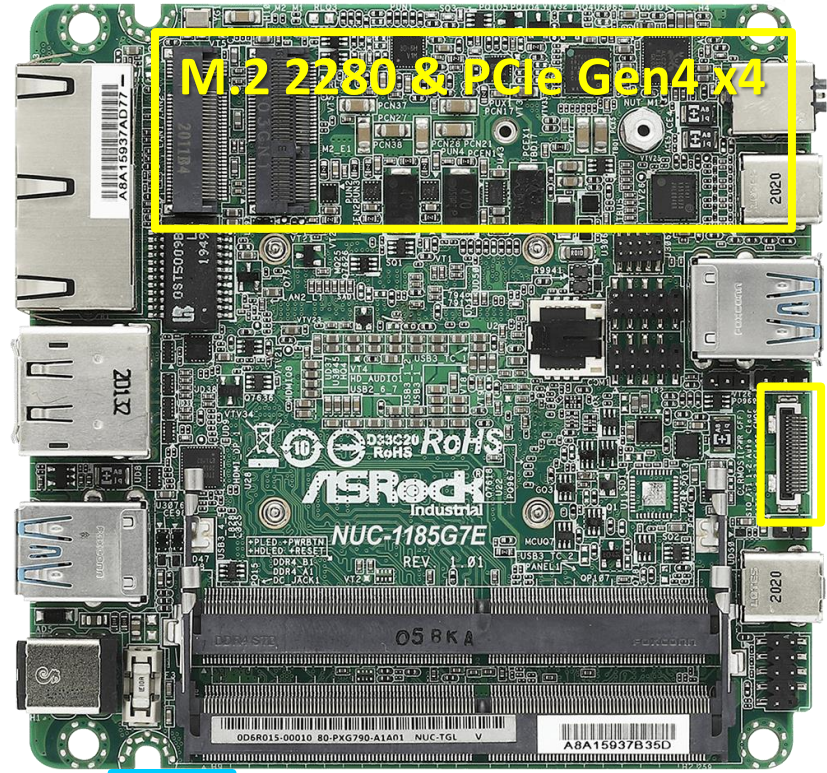
Type	Form Factor	i7 Series	i5 Series	i3 Series
M/B	<b>NUC</b> (NUC 1100 Series)	NUC-1185G7E	NUC-1145G7E	NUC-1115G4E
M/B	<b>Mini-ITX</b>	IMB-1224P	IMB-1224M	IMB-1224V
M/B	<b>Mini-STX</b>	STX-1500P	STX-1500M	STX-1500V
<b>BOX PC</b>	<b>Fanless BOX</b> (iBOX 1100 Series)	iBOX-1185G7E	iBOX-1145G7E	iBOX-1115G4E
<b>BOX PC</b>	<b>Fanned BOX</b> (NUC 1100 BOX Series)	NUC BOX-1165G7*	NUC BOX-1135G7*	NUC BOX-1115G4*

**\* Without Longevity Support**



<b>CPU</b>	Intel® 11th Gen (Tiger Lake-UP3) Core™ Processors NUC-1185G7E (I7-1185G7E, 4C/8T, up to 4.4GHz) NUC-1145G7E (I5-1145G7E, 4C/8T, up to 4.1GHz) NUC-1115G4E (I3-1115G4E, 2C/4T, up to 3.9GHz)
<b>Memory</b>	2*SO-DIMM <b>DDR4-3200, Up to 64GB</b>
<b>Graphics Outputs</b>	<b>Support Quad-Display</b> - 1*HDMI 2.0a, 3*DP1.4 (2 from Type-C)
<b>Storage</b>	1 x SATA3.0 1 x M.2 Key M (2242/2260/2280) with <b>PCIe Gen4 x4 &amp; SATA3</b> *M.2 Key M 2280(Supported by bracket)
<b>LAN</b>	NUC-1185G7E / NUC-1145G7E LAN1: Intel® I219LM (1 GbE), LAN2: <b>Intel® I225LM (2.5 GbE)</b> NUC-1115G4E LAN1: Intel® I219V (1 GbE), LAN2: <b>Intel® I225LM (2.5 GbE)</b>
<b>Expansion Slots</b>	1*M.2 Key E 2230 with PCIe x1/USB2.0 and CNVi for Wireless
<b>USB</b>	<b>Total 8 USB Ports</b> Front: 2*USB 3.2 Gen2 (Type-A) 2*USB 3.2 Gen2 (Type-C) *USB4™ Compliance Test is pending for certification Rear: 2*USB 3.2 Gen2 (Type-A), Internal: 2*USB2.0 (1*2.54 Pitch header)
<b>COM</b>	1*COM(RS-232)
<b>Audio</b>	1 (headphone & microphone jack)
<b>TPM</b>	Infineon TPM2.0 IC Onboard
<b>Input Power</b>	<b>12~19V DC-in Jack</b>

# Spec Comparison: NUC-8665UE vs. NUC-1185G7E



M.2 2280 & PCIe Gen4 x4

	NUC-8665UE	NUC-1185G7E
DDR4-3200	No (DDR4-2400)	Yes
DP1.4	No (DP1.2a)	Yes
HDMI 2.0a	No (HDMI 1.4)	Yes
Quad-Display	No (Triple-Display)	Yes (1x HDMI2.0a, 3x DP1.4)
Intel 2.5G LAN	No (1G LAN)	Yes
Dual Storage	No (SATA Signal shared)	Yes (1x SATA3 + M.2 2280)
M.2 Key M	PCIe Gen3 x4	PCIe Gen4 x4
USB Ports	5 Ports	Up to 8 Ports
DC_IN Voltage	12V only	12~19V

2.5G LAN



# iBOX 1100 Series Specification



<b>Dimensions</b>	171.8 x 109.45 x 50.05 mm
<b>CPU</b>	Intel® 11th Gen (Tiger Lake-UP3) Core™ Processors iBOX-1185G7E (I7-1185G7E, 4C/8T, up to 4.4GHz) iBOX-1145G7E (I5-1145G7E, 4C/8T, up to 4.1GHz) iBOX-1115G4E (I3-1115G4E, 2C/4T, up to 3.9GHz)
<b>Memory</b>	2*SO-DIMM DDR4-3200, Up to 64GB
<b>Graphics Outputs</b>	Quad-Display - 1*HDMI 2.0a, 3*DP1.4 (2 from Type-C)
<b>Storage</b>	1 x SATA3.0 1 x M.2 Key M (2242/2260/2280) with PCIe Gen4 x4/SATA3 <small>*M.2 Key M 2280(Supported by bracket)</small>
<b>LAN</b>	iBOX-1185G7E / iBOX-1145G7E LAN1: Intel® I219LM (1GbE), LAN2: Intel® I225LM (2.5GbE) iBOX-1115G4E LAN1: Intel® I219V (1GbE), LAN2: Intel® I225LM (2.5GbE)
<b>Expansion Slots</b>	1*M.2 Key E 2230 with PCIe x1/USB2.0 and CNVi for Wireless
<b>USB</b>	<b>Total 8 USB ports</b> Front: 2*USB 3.2 Gen2 (Type-A) + 2*USB2.0 2*USB 3.2 Gen2 (Type-C) *USB4™ Compliance Test is pending for certification Rear: 2*USB 3.2 Gen2 (Type-A)
<b>COM</b>	1* COM(RS-232)
<b>Audio</b>	1 (headphone & microphone jack)
<b>TPM</b>	Infineon TPM2.0 IC Onboard
<b>Input Power</b>	19V/90W adapter (12~19V DC-in)





	iBOX-1145G7E	iBOX-8365UE
Dimension	171.8 x 109.45 x 50.05 mm (0.94L)	171.8 x 150 x 71.5 mm (1.84L)
CPU	i5-1145G7E, 4C/8T, Up to 4.1 GHz	i5-8365UE, 4C/8T, up to 4.1 GHz
Memory	2*SO-DIMM DDR4-3200, Up to 64GB	2*SO-DIMM DDR4-2400, Up to 32GB
Graphics Outputs	Quad-display 1*HDMI 2.0a, 3*DP1.4(2 from Type-C)	Triple-display 1 x HDMI1.4, 2x DP1.2a
Storage	1 x M.2 (Key M 2242/2260/2280) with PCIe Gen4 x4 and SATA3 1 x SATA3 Port	1 x M.2 (Key M 2242/2260/2280) with PCIe Gen3 x4 and SATA3 (Shared) 1 x SATA3 Port (Shared with Key M)
LAN	1*Intel 2.5G LAN + 1*Intel 1G LAN	1*Intel 1G LAN + 1*Realtek 1G LAN
USB	Total 8 USB ports Front: 2*USB 3.2 Gen2 (Type-A) 2* USB 3.2 Gen2 (Type-C), 2* USB2.0 Rear: 2*USB 3.2 Gen2 (Type-A)	Total 5 USB ports Front: 1*USB 3.2 Gen1 (Type-A), 2*USB2.0 Rear: 2*USB 3.2 Gen2 (Type-A)
Input Power	12~19V DC-in Jack	Only 12V DC-in Jack

**SIZE SAVING**  
Height saving 21.45 mm  
Width saving 40.55 mm

**iBOX Volume  
Saving 0.9L**

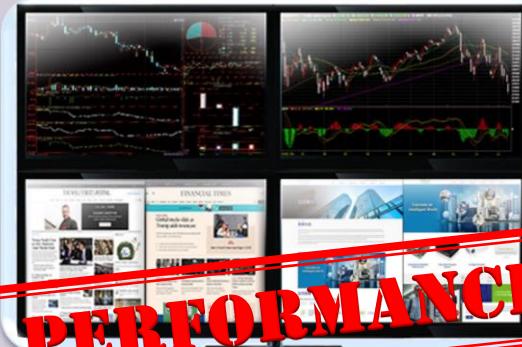




**SPEEDY**

## Intel® 2.5G LAN

- Intel i225 LAN adopt
- Boost networking performance up to **2.5X**
- Faster file transfers, lower latency and smoother high quality video streaming



**PERFORMANCE**

## Quad-Display

- Quad-Display 4K@60Hz  
- HDMI 2.0a/ DP1.4/  
2\*DP 1.4(Type-C)
- Enhance simultaneous visual experience



**DIVERSITY**

## Dual-Storage & PCIe Gen4 for Key M

- Key M 2280 + 2.5" SSD
- 1 x SATA3  
1 x Key M 2242/2260/2280 with **PCIe Gen4 x4** and SATA3 for M.2 SSD
- Optimize storage performance and capacity



**PERFORMANCE**

## Powerful CPU/GPU

- Integrated Intel® Iris® Xe Graphics (i7/i5)
- Execution Units up to 96
- Optimal Performance for multiple, real-time computing



**FLEXIBILITY**

## DC in voltage

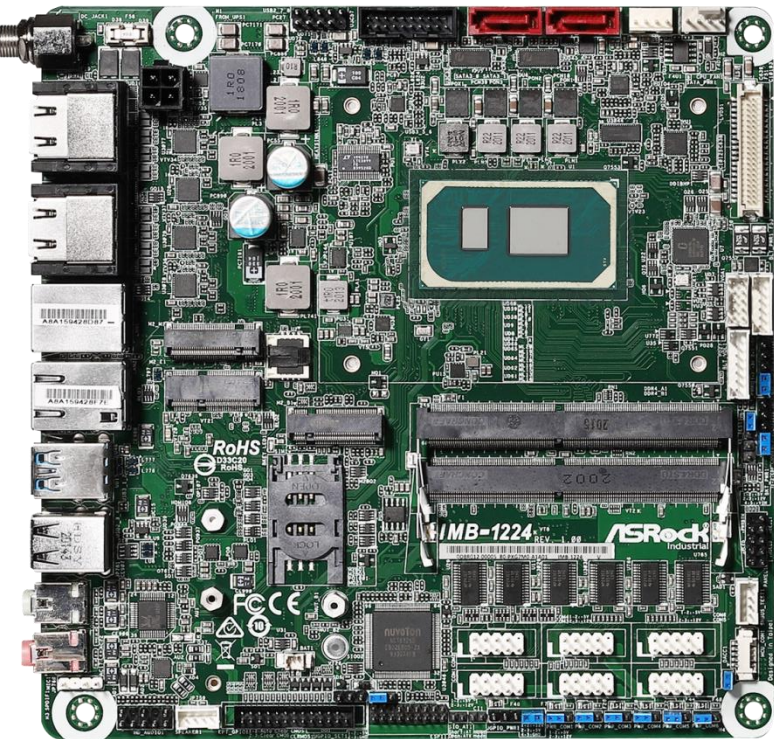
- 12~19V DC-in design
- Flexible acceptance of inconsistent power input
- OVP/UVp for Protection



**SECURITY**

## Onboard TPM2.0

- Integrated Infineon TPM2.0 SLB9670
- Provide hardware-based security for Industrial data protection

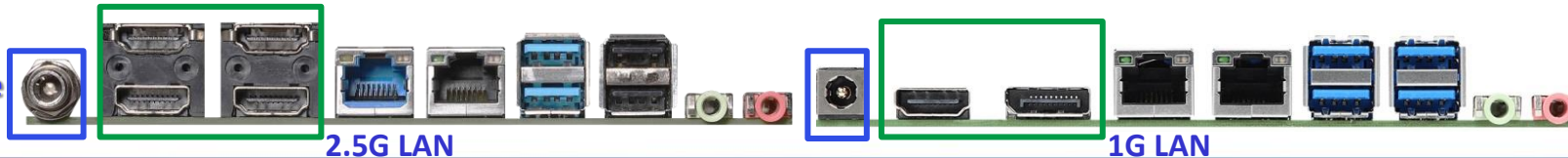


CPU	Intel® 11th Gen (Tiger Lake-UP3) Core™ Processors IMB-1224P (i7-1185G7E, QC, Max Speed up to 4.4GHz) IMB-1224M (i5-1145G7E, QC, Max Speed up to 4.1GHz) IMB-1224V (i3-1115G4E, DC, Max Speed up to 3.9GHz)
Memory	2*SO-DIMM DDR4-3200, Up to 64GB
Graphics Outputs	Support Quad-display 4*HDMI 2.0b, 1*LVDS, 1*eDP, 1*VGA (Shared with HDMI_1)
Storage	2 x SATA3.0 1 x M.2 Key M (2242/2260/2280) with PCIe Gen4 x4/SATA3 (shared with SATA3_0)
LAN	IMB-1224P / IMB-1224M LAN1: Intel® I219LM (1GbE), LAN2: Intel® I225LM (2.5GbE) IMB-1224V LAN1: Intel® I219V (1GbE), LAN2: Intel® I225LM (2.5GbE)
Expansion Slots	1*M.2 Key E 2230 with PCIe x1/USB2.0 and CNVi for Wireless 1*M.2 (Key B*, 3042/3052) with PCIe x1/USB 3.2/USB2.0/SATA and SIM for 4G/5G (*Shared with SATA3_1)
USB	Rear: 2*USB 3.2 Gen2 + 2*USB2.0 Internal: 1*USB3.2 Gen1 + 3*USB2.0 (1*2.54 pitch header + 1* USB3.2 header)
COM	2*COM(RS-232/422/485) + 4*COM(RS-232)
Audio	2 (Mic-in, Line-out)
TPM	Infineon TPM2.0 IC Onboard
Input Power	12~28V DC-In with 4-pin wafer PWR cable or Screw Type DC Jack



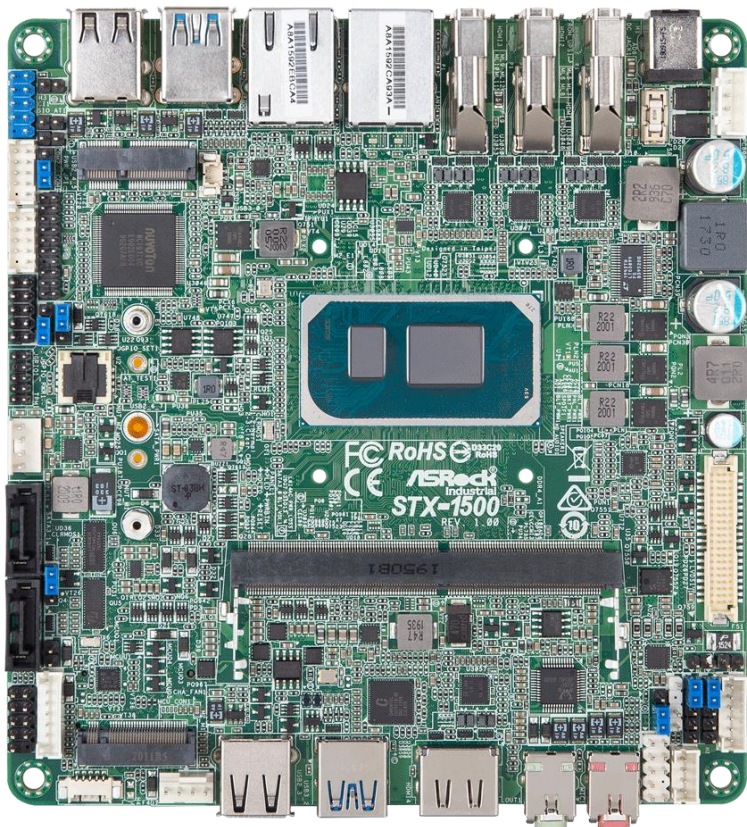
	IMB-1224 (Tiger Lake-UP3)	IMB-1216 (Whiskey Lake-U)
CPU	IMB-1224P (i7-1185G7E, QC, Max Speed up to 4.4GHz) IMB-1224M (i5-1145G7E, QC, Max Speed up to 4.1GHz) IMB-1224V (i3-1115G4E, DC, Max Speed up to 3.9GHz)	IMB-1216P (i7-8665UE, QC, 1.7GHz, 15W) IMB-1216M (i5-8365UE, QC, 1.6GHz, 15W) IMB-1216V (i3-8145UE, DC, 2.2GHz, 15W)
Memory	2*SO-DIMM DDR4-3200, Up to 64GB	2*SO-DIMM DDR4-2400, Up to 32GB
Graphics Outputs	Support Quad-display 4*HDMI 2.0b, 1*LVDS, 1*eDP, 1*VGA (Shared with HDMI_1)	Supports Triple-display 1*HDMI 2.0a, 1*DP 1.2 or VGA, 1*LVDS or eDP
Storage	2*SATA3.0 1*M.2 Key M (2242/2260/2280) with PCIe Gen4 x4/ SATA3 (Shared with SATA3_0)	2*SATA3.0 1*M.2 (Key M, 2242/2260/2280) with PCIe Gen3 x4/SATA3
M.2	1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless 1 x M.2 (Key B*, 3042/3052) with PCIe x1/USB 3.2/USB2.0/SATA and SIM for 4G/5G (* Shared with SATA3_1)	1 x M.2 (Key E, 2230) with PCIe x1, USB2.0 and CNVi for Wireless 1 x M.2 (Key B, 3042) with PCIe x1/USB 3.0 and SIM for 4G
LAN	1*Intel 2.5G LAN + 1*Intel 1G LAN	1*Intel 1G LAN + 1*Realtek 1G LAN
USB	Total support up to 8 Ports Rear: 2*USB 3.2 Gen2, 2*USB2.0 Internal: 1*USB3.2 Gen1 + 3*USB2.0 (1*2.54 pitch header, 1*USB3.2 header)	Total support up to 8 Ports Rear: 4*USB 3.2 Gen1 Internal: 1*USB3.2 Gen1(Type-A) + 3*USB2.0 (2*2.54 pitch header)
Input Power	12~28V DC-In with 4-pin wafer PWR cable or Screw Type DC Jack	12~28V DC-In with 4-pin wafer PWR cable or DC Jack

Screw Type



2.5G LAN

1G LAN



CPU	Intel® 11th Gen (Tiger Lake-UP3) Core™ Processors STX-1500P (i7-1185G7E, 2.8GHz, 28W) STX-1500M (i5-1145G7E, 2.6GHz, 28W) STX-1500V (i3-1115G4E, 3.0GHz, 28W)
Memory	2*SO-DIMM DDR4-3200, Up to 64GB
Graphics Output	Quad-Display - 4*HDMI 2.0b, 1*LVDS, 1*eDP1.4
Storage	2 x SATA3.0 1 x M.2 Key M (2242/2260/2280) with PCIe Gen4 x4/SATA3 (Shared with SATA3_0)
LAN	STX-1500P / STX-1500M LAN1: Intel® I219LM (1GbE), LAN2: Intel® I225LM (2.5GbE) STX-1500V LAN1: Intel® I219V (1GbE), LAN2: Intel® I225LM (2.5GbE)
Expansion Slots	1*M.2 Key E 2230 with PCIe x1/USB2.0 and CNVi for Wireless 1*M.2 (Key B, 3052/3042/2280) with PCIe x1/USB3.2/USB2.0 and SIM for 4G/5G
USB	Front: 1*USB 3.2 Gen2 + 1*USB2.0 Rear: 2*USB 3.2 Gen2 + 2*USB2.0 Internal: 1*USB2.0 (1*2.54 pitch header)
COM	1*COM(RS-232/422/485) + 1*COM(RS232)
Audio	2 (Mic-in, Line-out)
TPM	Infineon TPM2.0 IC Onboard
Input Power	12~28V DC-In with 4-pin wafer PWR cable or DC Jack

# THE DIMINUTIVE CHAMPIONS ***NUC 1100 BOX SERIES***

NUC BOX-1165G7 | NUC BOX-1135G7 | NUC BOX-1115G4





Model	CPU	Core/ Threads	Frequency Boost / Base	Cache	Graphics EU / Freq.	cTDP
<b>NUC BOX-1165G7</b>	<b>i7-1165G7</b>	<b>4 / 8</b>	<b>4.7 / 2.8 GHz</b>	<b>12 MB</b>	<b>96 / 1.30 GHz</b>	<b>12-28W</b>
<b>NUC BOX-1135G7</b>	<b>i5-1135G7</b>	<b>4 / 8</b>	<b>4.2 / 2.4 GHz</b>	<b>8 MB</b>	<b>80 / 1.30 GHz</b>	<b>12-28W</b>
<b>NUC BOX-1115G4</b>	<b>i3-1115G4</b>	<b>2 / 4</b>	<b>4.1 / 3.0 GHz</b>	<b>6 MB</b>	<b>48 / 1.25 GHz</b>	<b>12-28W</b>





# Diminutive Champions

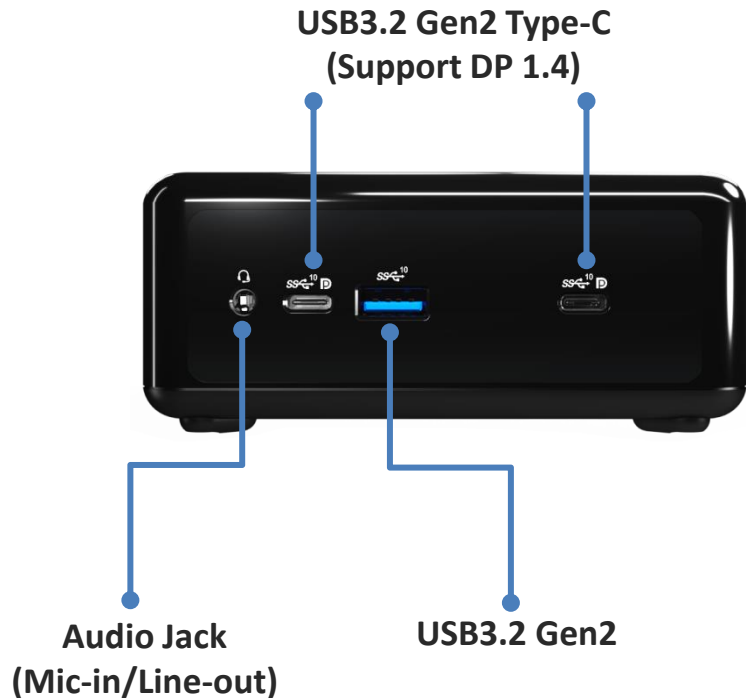


## The Smallest Tiger Lake-U Mini PC

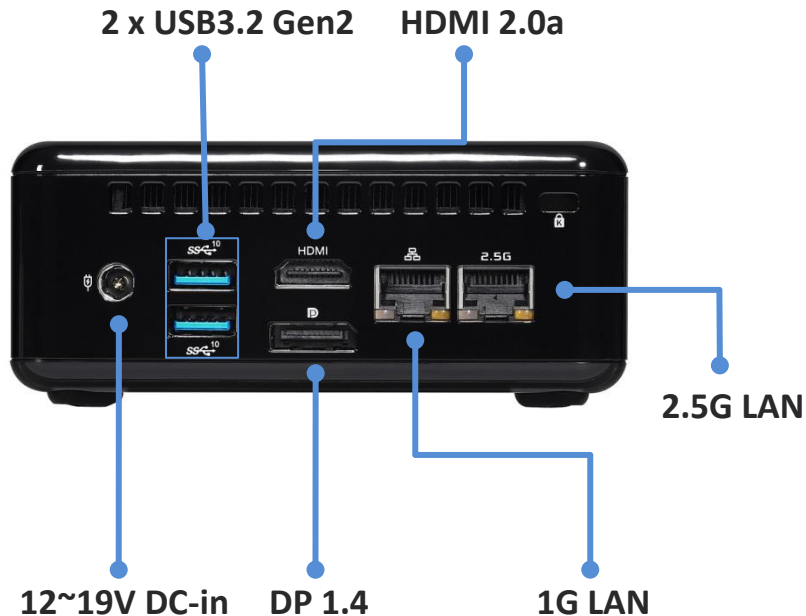
- DDR4-3200, up to 64GB
- Quad-Display with 4K@60Hz
- Dual Storage (M.2 2280 Gen4 x4 + 2.5" SSD)
- Wi-Fi 6 AX200 + BT5.1
- Dual LAN (2.5G + 1G)
- 5x USB3.2 Gen2 Ports (10 Gbps)



## Front Side








## Back Side





Dimensions	110.0 x 117.5 x 47.85 mm (0.6L)
CPU	Intel® 11th Gen (Tiger Lake-UP3) Core™ Processors NUC BOX-1165G7 (I7-1165G7, 4C/8T, up to 4.7GHz) NUC BOX-1135G7 (I5-1135G7, 4C/8T, up to 4.2GHz) NUC BOX-1115G4 (I3-1115G4, 2C/4T, up to 4.1GHz)
Memory	2*SO-DIMM DDR4-3200, Up to 64GB
Graphics Outputs	Support Quad-Display - 1*HDMI 2.0a, 3*DP 1.4 (2 from Type C)
Storage	1 x SATA3.0 1 x M.2 Key M (2242/2260/2280) with PCIe Gen4 x4/SATA3 *M.2 Key M 2280(Supported by bracket)
LAN	1*Intel 2.5G LAN + 1*Intel 1G LAN
Wireless Network	Intel® Wi-Fi 6 AX200 and Bluetooth 5.1
USB	Front I/O: 1*USB 3.2 Gen2 (Type A) 2*USB 3.2 Gen2 (Type C, supports DP1.4) Rear I/O: 2*USB 3.2 Gen2
Audio	1 (Mic-in/Line-out Combo)
TPM	Infineon TPM2.0 IC Onboard
Input Power	19V/90W adapter (12~19V DC-in)

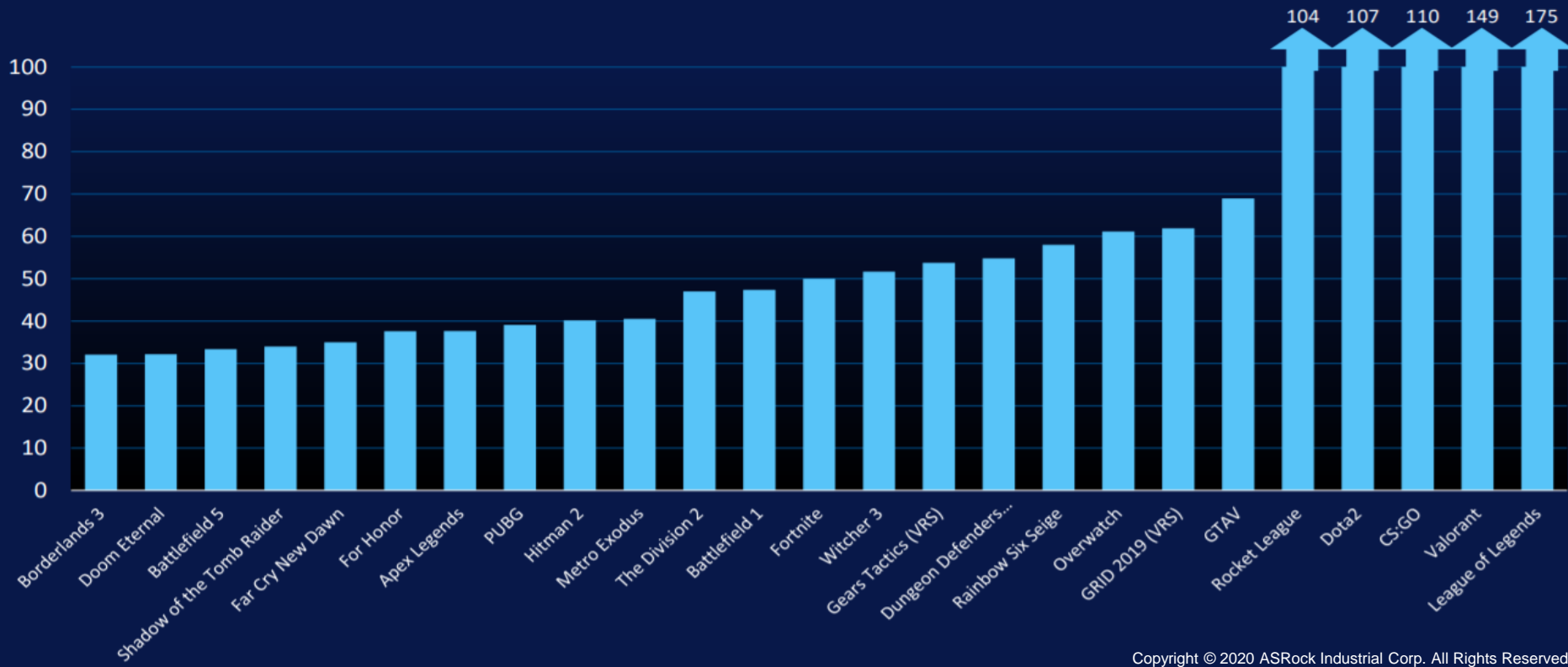


Item / Model	NUC BOX-1165G7  	NUC BOX-8665UE 	Comparison Result
Dimension	110.0 x 117.5 x 47.85 mm <b>(0.6L)</b>	110.0 x 118.5 x 67.3 mm <b>(0.88L)</b>	Saving Size Greatly
DRAM Frequency	DDR4-3200	DDR4-2400	Faster DRAM Freq.
Graphics Freq. / EU	Up to 1300 MHz / 96EU	Up to 1150 MHz / 24EU	Higher GPU Freq.
Display Output	Quad-Display (3* DP1.4 + 1*HDMI 2.0a)	Triple-Display (2*DP 1.2a + 1* HDMI 1.4b)	One more Display with 4K@60Hz
Ethernet Controller	Dual LAN (2.5G + 1G)	Single LAN (1G)	Dual LAN & 2.5 LAN
Wireless Ethernet	Wi-Fi 6 AX200 (802.11ax) + BT5.1	AC3168 (802.11ac) + BT4.2	Faster Speed (2.4Gbps)
DC-In Voltage	12~19V	12V only	Flexible DC-in Voltage
Cinebench R20	2283 	971	<b>135%</b> ▲
3DMark Fire Strike	4284 	1228	<b>249%</b> ▲



# Playable Titles at 1080p!

## Intel® Iris® Xe Graphics





## Digital Signage



## Kiosk





## Teleconference





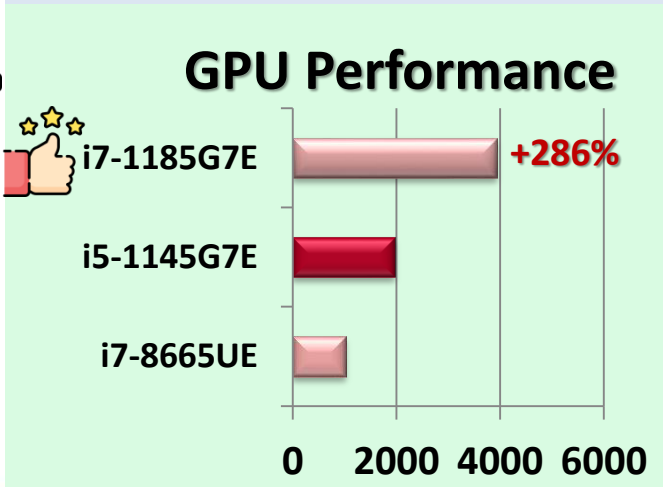
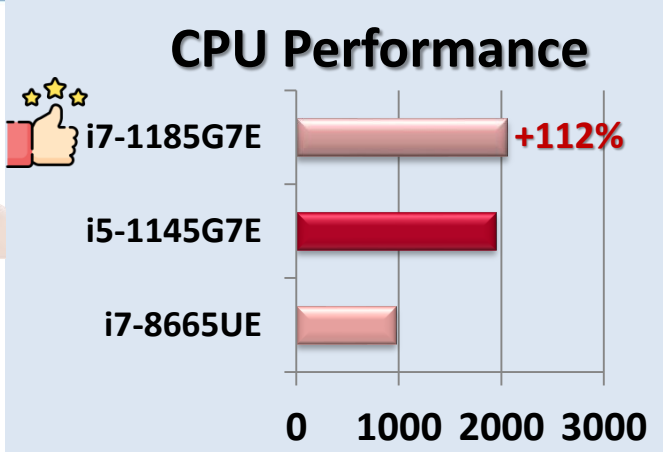
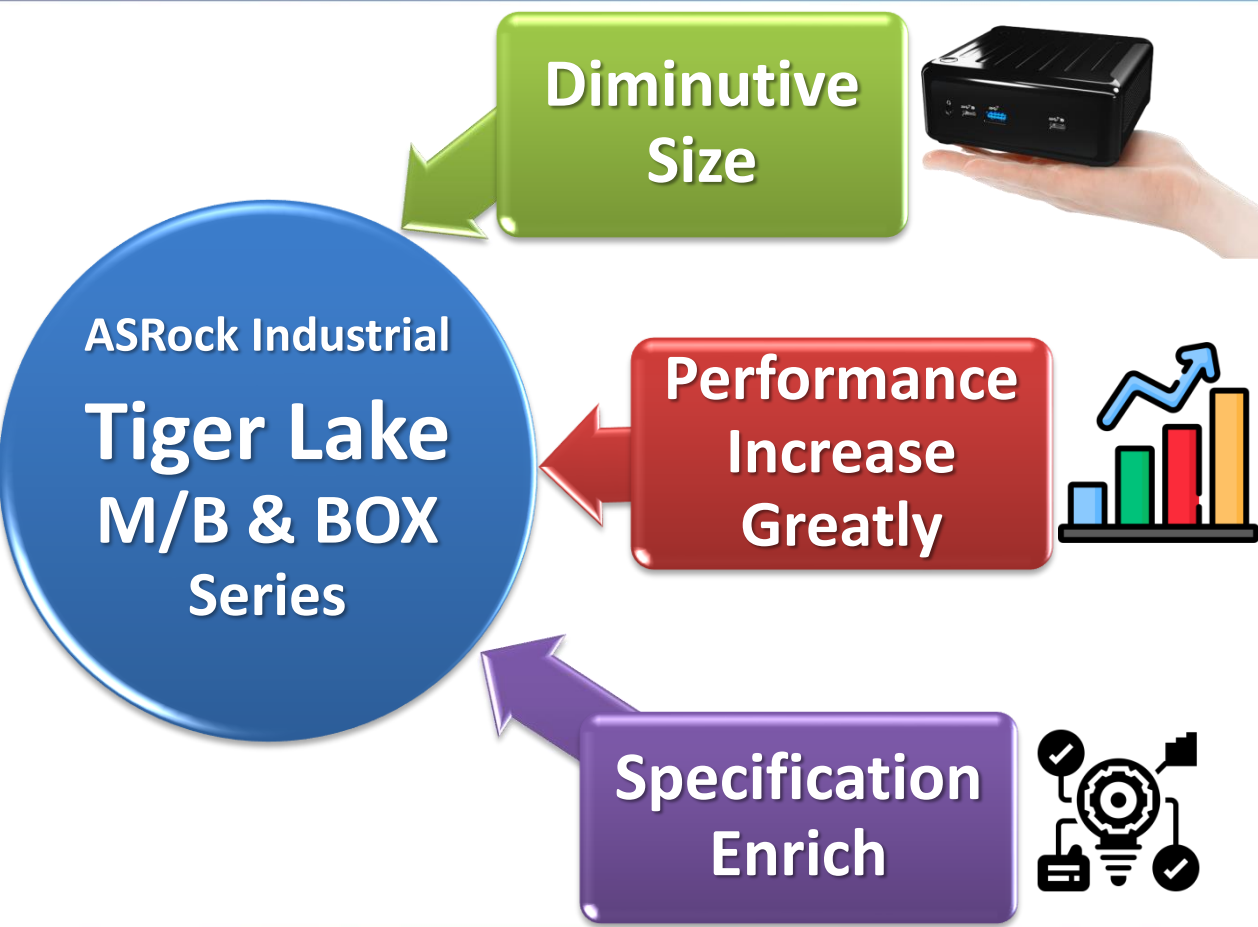
Home Theater PC

Casual Gaming





# Summary



**Thank You for Joining  
our Webinar!**





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