AI-PC BAREBONE
XPC nano
NA10H7
AMD Ryzen™ 7-8845HS APU

AFFORDABLE AI-PC IN NANO FORMAT
POWERED BY AMD RYZEN ZEN-4 APU

Powered by the AMD Ryzen™ 7-8845HS APU processor with Zen 4 microarchitecture, the Shuttle XPC nano Barebone NA10H7 comes with 8 cores, 16 threads, and AMD Radeon™ 780M graphics, delivering advanced performance and AI-readiness capabilities. The AI performance of the NPU is 16 TOPS and a total of 39 TOPS for NPU+CPU+GPU in combination, The AI-PC supports up to 64GB of DDR5 memory, and offers extensive I/O options including four UHD graphics ports and two USB4 ports. The NA10H7 provides high-performance, cost-effective solutions for generative AI workloads, making it ideal for content creation, gaming, entertainment, office tasks, commerce, and AIoT applications.

1L 1-LITRE AI-PC
CPU AMD RYZEN WITH NPU
SUPPORTS 64GB DDR5
M.2 M.2 SSD SUPPORT
4X 4x DISPLAY SUPPORT
2x HDMI 2.0
2x USB4 with DP 1.4
SS 5x USB 3.2 1x USB 2.0
Dual 2.5G LAN
SD CARD READER
VESA MOUNT included
24/7 24/7 SUPPORT

NANO DESIGN
■ Nano plastic chassis, black ■ Dimensions: 132 x 143 x 55 mm (WLH), 1.04 Litre (height incl. feet: 57.8 mm) ■ Weight: 800g net
■ Operating temperature: 0~40 °C at 10-90 %RH (non-condensing)
■ VESA mount included, supports 75x75 and 100x100 mm

OPERATING SYSTEM
■ An operating system is not included
■ Supports Windows 11 and Linux (64-bit)
■ Windows driver download: go.shuttle.eu/NA10H (no DVD included)

PROCESSOR
■ AMD Ryzen™ R7-8845HS APU, code name "Hawk Point"
■ 4- nm Zen 4 architecture, cTDP: 35-54W (configurable)
■ 8 Cores, 16 Threads, Core clock: 3.8 – 5.1 GHz, 16 MB L3 Cache
■ NPU with 16 TOPS AI performance (NPU+CPU+GPU: 39 TOPS)
■ Dual fan heat-pipe cooling system for optimized air-flow: 80 mm CPU fan and 60 mm chassis fan

GRAPHICS ENGINE
■ AMD Radeon 780M graphics accelerator
■ supports four independent UHD displays at 60 Hz

RAM MEMORY SUPPORT
■ 2x 262-pin SO-DIMM slot ■ Supports up to 2x 32 GB DDR5-5600

M.2 STORAGE AND Card Reader
■ 1x M.2-2280M slot supports one SSD card with PCIe Gen 4 x4 NVMe
■ 1x M.2-2230E slot supports M.2 WLAN card (not included), two internal antennas are already pre-installed
■ 1x SD Card Reader (left side)

CONNECTORS
■ 2x HDMI 2.0 ■ 2x USB4 Type-C (max. 40 Gbps) supports DisplayPort 1.4 and 3A PD ■ 5x USB 3.2 Gen2 Type-A (max. 10 Gbps) ■ 1x USB 2.0
■ 2x 2.5G LAN (Realtek) ■ 3.5 mm Audio Combo port ■ DC input 19 V
■ Power Button with Power LED Indicator

POWER ADAPTER
■ 120W power adapter (DC: 19V/6.32A, 3-pin AC plug with earth contact)

EMC & SAFETY
■ EMI: CE, FCC, BSMI
■ Safety: CB IEC62368, cTUVus (UL 62368), BSMI

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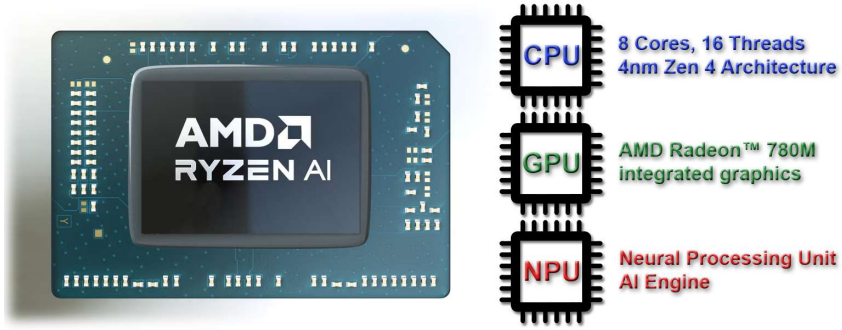
PRODUCT FEATURES

Quad 4K/UHD Display support

NA10H7 features four digital video outputs:
2x HDMI and 2x DisplayPort 1.4 via USB-C.

This allows for the connection of four independent displays at 4K resolution (3840 x 2160), leveraging hardware decoding and encoding for popular video codecs including AV1 and H.265. Using four displays can be a game-changer in various applications, enhancing productivity and providing a more immersive experience. This is advantageous for scenarios such as: Financial Trading, Software Development, Graphic Design, Video Editing, Gaming, Command Centers, Surveillance.



AMD Ryzen™ 7 8845HS Processor

The NA10H7's advanced Zen 4 architecture supercharges productivity across diverse scenarios. In data analysis, it speeds up complex calculations, while in scientific simulations, it enables real-time modeling. For content creators, AI-enhanced tools accelerate video editing and 3D rendering, significantly reducing production time.

The integrated top-tier Radeon 780M graphics (GPU) with 12 EUs (768 Shader) is one the fastest of its kind and performs competitively in games and real-life applications – best choice if graphics performance is crucial for you.

The integrated Neural Processing Unit (NPU) is designed to accelerate artificial intelligence (AI) and machine learning tasks. It boast a top maximum performance of 16 trillion operations per second (TOPS). Additionally, the full processor performance scales up to 39 TOPS, making it a powerful profile suited for demanding and diverse industrial computing workloads.

Fast Data Access with DDR5 and PCIe 4.0

Experience high-bandwidth, energy-efficient, and unparalleled speed memory for smooth multitasking and data-intensive tasks.
Benefit from the advantages of DDR5 memory with higher bandwidth and lower voltage compared to DDR4.
NA10H7 also features a M.2-2280-Slot with PCI-Express Gen. 4 interface for faster speeds of compact modern M.2 SSD cards.
NA10H7 also integrates a SD card reader for quickly access documents, photos and other files on your SD card.

Multiple modern I/O Ports

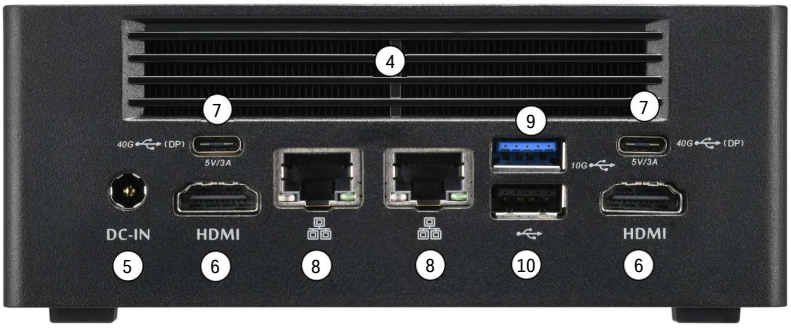
The NA10H7 can connect up to four digital 4K/UHD displays. Two USB4 Type-C ports support data transfer speeds of up to 40 Gbps, significantly faster than previous USB versions. Five USB 3.2 plus one USB 2.0 allow you to connect a variety of legacy and modern devices simultaneously. Dual 2.5G LAN ports provide higher network speeds compared to traditional 1G ports, making them ideal for bandwidth-intensive applications like gaming, video streaming, and large file transfers. The Audio Combo port supports both headphone and microphone connections. It allows you to connect a headset with an integrated microphone, making it convenient for activities like video calls, gaming, and listening to music.

Front and Back Panel

Front Panel

1. 4x USB 3.2 Gen 2 Type-A Port
   Note: the left USB port delivers 0.9A/5V even in S5/Off mode
2. 3.5 mm Audio Combo port supports headphones and headsets (with microphone)
3. Power button with Power LED

Back Panel

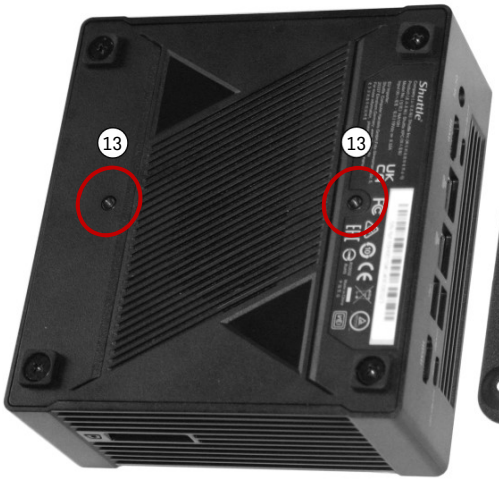


4. Ventilation openings
5. DC-in connector for power adapter
6. 2x HDMI 2.0
7. 2x USB4 Type-C (max. 40 Gbps) with DisplayPort function (DP 1.4) and Power Delivery (PD max. 5V / 3A)
8. 2x 2.5G LAN Port (RJ45)
9. 2x USB 3.2 Gen 2 Port (max. 10 Gbps)
10. 1x USB 2.0 Port
11. SD Card Reader
12. Hole for the Kensington Lock

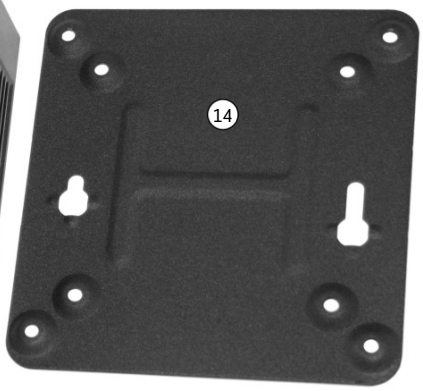
Left View

Right View

Bottom View



VESA Mount



13. Threads for installing the VESA mount (please refer to the Quick Installation Guide)
14. VESA mount supports 75x75 mm and 100x100 mm (screws included)

REQUIRED COMPONENTS

The following components need to be added to make it a fully-configured Mini PC:

(1) Memory Modules

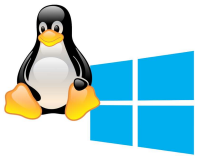
Supports two SO-DIMM DDR5 memory modules
– type: DDR5-5600 (or higher clock rate)
– form factor: SO-DIMM with 262 pins
– max. capacity per module: 32 GB
– total capacity of two modules: max. 64 GB

(2) M.2 SSD Card

Supports one M.2 SSD card
– form factor: M.2-2280 (the length is 80 mm)
– interface: PCI-Express (supports PCEe Gen4x4 and NVMe)
Note: SATA is not supported!

(3) M.2 WLAN Card (optional)

Supports one WLAN card in M.2-2230 (E-Key) form factor, which is not included in the scope of delivery (possible models: e.g. Intel AX200, AX210 or AzureWave AW-XB547NF, AW-XB591NF or similar).
Two internal antennas are pre-installed, so you just need to install the WLAN module and connect the antennas.



(4) Operating System

Windows 11 or Linux (64-bit only)
Windows driver download: go.shuttle.eu/NA10H

For installation please refer the Quick Installation Guide.

SHUTTLE XPC nano BAREBONE NA10H7 — SPECIFICATIONS

CHASSIS	Barebone PC with a black plastic chassis Dimensions: 132 x 143 x 55 mm (WLH) = 1038 ml The height is 57.8 mm including rubber feet Weight: 0.8 kg net, 1.7 kg gross Hole for Kensington Lock Includes VESA mount for 75x75 and 100x100 mm standard
OPERATION SYSTEM	This barebone system comes without operating system. It is compatible with: - Windows 11, 64-bit - Linux, 64-bit Windows 11 driver download: go.shuttle.eu/NA10H
PROCESSOR	Model: AMD Ryzen™ 7-8845HS AMD Ryzen™ 8040 serie, coden ame: "Hawk Point" with Zen-4 architecture System-on-a-chip architecture (SoC) with integrated memory and graphics controller Core frequency: 3,8 - 5,1 GHz AI performance of the NPU: 16 TOPS Total AI performance of CPU+GPU+NPU: 39 TOPS Processor cores: 8, Threads: 16 Cache memory: 8 MB L2 and 16 MB L3 Configurable TDP (cTDP): 35, 45 or 54 Watts [1] Manufacturing process technology of the cores: TSMC 4nm FinFET Supported extensions: AES, AMD-V, AVX, AVX2, AVX512, FMA3, MMX-plus, SHA, SSE, SSE2, SSE3, SSE4.1, SSE4.2, SSE4A, SSSE3, x86-64 Maximum Tjunction Temperature (Tjmax): 100 °C
COOLING SYSTEM	Heat-pipe cooling system with dual fan concept for optimal airflow: 1) Processor fan 80 mm 2) Chassis fan (bottom) 60 mm Supports temperature-controlled RPM fan speed [1]
INTEGRATED GRAPHICS	AMD Radeon™ 780M graphics engine Graphics cores: 12 CPU clock: 2700 MHz This PC supports up to four independent screens with up to 4K/60Hz (Ultra HD 3840×2160 resolution): - 2x HDMI 2.0b - 2x USB4 Type-C with DisplayPort 1.4 function
UEFI FIRMWARE (BIOS)	AMI UEFI Firmware (BIOS) Supports resume after power failure Supports Wake-on-LAN (WOL) and Power on by real time clock (RTC)
H/W TPM FUNCTION	Hardware TPM function: supports DTPM 2.0 with Infineon SLB9670VQ2.0 The TPM function can be deactivated in the BIOS setup.
MEMORY SUPPORT	2x SO-DIMM slot with 262 pins Supports DDR5-5600 (PC5-44800) SDRAM at 1.1 V Supports Dual Channel mode Supports a maximum of 32 GB per DIMM, maximum total size: 64 GB Supports two unbuffered DIMM modules (no ECC or registered)
M.2-2280M SSD SLOT	M.2-2280M slot for SSD cards in M.2 form factor Supports PCIe Gen4 x4 with NVMe (no SATA) Supports M.2 cards with a width of 22 mm and a length of 80 mm Supports M.2 cards with M key or B+M key
AUDIO	Realtek ALC269-VC3 Audio Controller 3.5 mm / 4-pole combo audio connector (combines Line-out and Microphone input) Can be used for headphones/headsets with 3- or 4-pole jack plug [2] Digital multi-channel audio output: via HDMI and DisplayPort (USB-C)

DUAL 2.5G LAN	Two RJ45 ports with 2 status LEDs each Ethernet Controller: Realtek RTL8125B Supports 10 / 100 / 1.000 / 2.500 MBit/s operation (max. 2.5 Gbps) Supports WAKE ON LAN (WOL) Supports network boot by Preboot eXecution Environment (PXE)
M.2-2230-SLOT FOR WLAN CARDS	M.2-2230E slot supports WLAN expansion cards Interfaces: PCI-Express X1 and USB 2.0 Supports M.2 cards with a width of 22 mm and a length of 30 mm (type 2230) This PC comes with two pre-installed internal WLAN antennas with I-PEX4/MHF-IV connectors
SD CARD READER (LEFT SIDE)	SD card reader supports SD cards in the size of 24 mm × 32 mm Supports Micro SD cards with appropriate adapter (not included)
FRONT PANEL CONNECTORS	1x Power button with Power LED (blue) 4x USB 3.2 Gen 2 Type-A (max. 10 Gbps) Note: the left USB port supports USB power in S5/Off mode (max. 0.9 A) 1x Audio Combo port (3.5 mm jack plug, 4-pole) [2]
BACK PANEL CONNECTORS	2x HDMI 2.0 2x USB4 Type-C (max. 40 Gbps) with DisplayPort function (DP 1.4) and Power Delivery (PD max. 5V / 3A) 1x USB 3.2 Gen 2 Type A (max. 10 GBit/s) 1x USB 2.0 2x 2.5G Ethernet LAN (RJ45, Realtek RTL8125B) 1x DC-Eingang für externes Netzteil (5,5 / 2,5 mm)
POWER ADAPTER	External 120 W power adapter (fanless) Dimensions: 64.5 mm x 22.5 mm x 98 mm (WHD) Input: 100~240 V AC, 50-60 Hz, max. 1.4 A Output: 19.0 V DC, max. 6.32 A, max. 120 W DC cable ca. 150 cm with coaxial connector: 5.5 / 2.5 mm (outer/inner diameter) The DC-input of the computer supports 19V ± 5%. AC cable, ca. 170 cm, 3-pin Micky MM C6 and Schuko earthed safety plug
SUPPLIED ACCESSORIES	- Multi-language Quick Installation Guide - VESA mount with screws (supports 75x75 and 100x100 mm standards) - Heat sink with two thermal pads for the M.2 SSD card - Power adapter 120 W with AC power cord A DVD driver disk is not supplied. Windows 11 driver download: go.shuttle.eu/NA10H
ENVIRONMENTAL SPECIFICATIONS	Operating temperature range: 0~40 °C Relative humidity range: 10~90% (non-condensing)
CERTIFICATIONS / COMPLIANCE	EMI: CE, FCC, BSMI Safety: CB IEC60950/62368, cTUVus (UL 62368), BSMI Other: RoHS, Energy Star, ErP This device is classed as a technical information equipment (ITE) in class B and is intended for use in living room and office. The CE-mark approves the conformity by the EU directives: (1) 2004/108/EC relating to electromagnetic compatibility (EMC), (2) 2006/95/EC relating to Electrical Equipment designed for use within certain voltage limits (LVD), (3) 2009/125/EC relating to ecodesign requirements for energy-related products (ErP)

Footnotes:

[1] Configurable fan speed and power consumption of the processor

In the BIOS setup, there is a "Fan Mode" option on the "Advanced" page to configure the fan control, which also has an effect on the maximum power consumption of the processor. The default setting "Normal Mode" offers a good balance between performance, temperature and fan speed. The "Fan Mode" setting also defines the upper limits for the average power dissipation (cTDP) and short-term power dissipation in turbo mode (Turbo TDP):

„Fan Mode" Setting	CPU Performance	Fan Speed	cTDP	Turbo TDP
Performance Mode	maximum	high	54 W	65 W
Normal Mode	high	medium	45 W	65 W
Silent Mode	medium	low	35 W	50 W

[2] Audio connector

The 3.5 mm audio jack at the front panel of this device supports both: headphones with a 3-pole connector and also headsets (with microphone) with a 4-pole connector. Headsets with separate connectors for headphones and microphone, though, require an appropriate adapter, if also the microphone should be used.

SHUTTLE XPC nano BAREBONE NA10H7 — Technical Drawings