BAREBONE
XPC all-in-one
X50N Black
With Intel N150 processor

15.6" ALL-IN-ONE PC FOR POS, POI AND KIOSK APPLICATIONS

The Shuttle XPC all-in-one X50N complements Shuttle's successful X50V9 series and offers the same range of connections, but is equipped with the efficient Intel N150 processor. Thanks to its passive heatpipe cooling, the system is virtually noiseless, maintenance-free and approved for 24/7 nonstop operation. Particularly suitable for vertical applications is the arrangement of connectors at the bottom and the IP54 compliant front panel which is dust-protected and protected from splashing of water.

TOUCH SCREEN · 1x 16GB DDR5 SUPPORT · HDMI + VGA Ports · Full HD WEBCAM · NVMe SSD SUPPORT · 2.5" BAY · Wi-Fi 5 (WLAN-ac) · VESA MOUNT SUPPORT · IP54 · Max. 40 °C · Fanless · 24/7 SUPPORT

COMMON FEATURES
■ IP54 compliant front panel ■ Dimensions: 391 x 327 x 42 mm (WHD)
■ Supports 24/7 Nonstop Operation ■ 100 mm VESA mount capable
■ Operating temperature: 0~40 °C ■ Fanless heatpipe cooling system

DISPLAY & GRAPHICS
■ 39.6 cm (15.6") LC Display, 1366 x 768 pixel resolution ■ Resistive touchscreen ■ Integrated Intel UHD graphics ■ HDMI 2.0b & VGA

OPERATING SYSTEM
■ An operating system is not included
■ Supports Windows 11 (64-bit) and Linux (64-bit)

PROCESSOR
■ Intel N150 SoC processor, 4 Cores, max. 3.6 GHz, 6 MB Cache, TDP: 6W
■ Code name "Twin Lake" ■ Intel 7 (10 nm) process

STORAGE (not included)
■ Supports max. 1x 16 GB DDR5-4800 SO-DIMM RAM
■ M.2-2280 slot supports one SSD card(PCIe/NVMe or SATA)
■ Supports one 2.5" SATA drive (hard disk or SSD), max. 9.5 mm height
■ Supports internal USB stick (USB 2.0, type A)

CONNECTIVITY
■ HDMI 2.0b ■ D-Sub/VGA ■ 2x USB 3.2 Gen 2 (max. 10 Gbps, red)
■ 4x USB 3.2 Gen 1 (max. 5 Gbps, blue) ■ internal: 1x USB 2.0 (Type A)
■ 2.5 Gbps LAN (Intel) ■ 2x Audio (Mic & headphones) ■ Power button
■ Clear CMOS button ■ Power LED and HDD LED ■ DC Input

BUILT-IN
■ 2.0 Megapixel FHD webcam ■ Electret Condenser Microphone
■ 2x 2 W speakers ■ Wi-Fi 5 Wireless Network with two internal Antennas (supports WLAN 802.11ac and Bluetooth 4.2)

POWER SUPPLY
■ External 65 W / 19 V power adapter (DC-in supports 12 or 19 V)

OPTIONAL ACCESSORIES
■ **WLN-M1:** WLAN upgrade kit (Intel AX200 card supports 802.11ax with two external antennas
■ **2x PCP11:** two adapters provide two serial COM ports (2x RS232) on the bottom side
■ **P0V21:** Robust Dual VESA Stand for one or two AIO PCs / Displays

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MODELS OF THE X50N / X50V9 SERIES

Product	Intel ULV CPU	P-Cores		E-Cores		Cache	Max. RAM Support	Color	UPC-Code
		Cores / Threads	Clock / Turbo	Cores / Threads	Clock / Turbo				
X50N	Intel N150 (Twin Lake)	–	–	4 / 4	0.1 / 3.6 GHz	6 MB	1x 16 GB DDR5-4800	Black	887993008592
								White	887993008622
X50V9	Celeron 7305 (Core Gen 12)	1 / 1	1.1 / – GHz	4 / 4	0.9 / – GHz	8 MB	2x 32 GB DDR5-4800	Black	887993006802
								White	887993006819
X50V9U3	Core i3-1315U (Core Gen 13)	2 / 4	1.2 / 4.5 GHz	4 / 4	1.2 / 4.5 GHz	10 MB	2x 32 GB DDR5-5200	Black	887993006215
								White	887993006222

PRODUCT FEATURES

All applications at your fingertips

The innovative touchscreen technology delivers the simplest operation possible and makes the screen the centre of action. Its high-quality design lets you control the whole range of multimedia - music, movies, video playback and web browsers start by just touching the screen.

24/7 nonstop operation

The Shuttle XPC all-in-one X50N is officially approved for 24/7 permanent operation. Thanks to its low power consumption and completely passive cooling, this PC runs highly reliable making it perfectly suitable for digital signage and POI/POS applications.

Conditions for permanent use:

- Ambient temperature while under load: 5 - 40 °C
- Air humidity while under load: 10 - 80 % (not condensing)
- Free circulation of air amongst the PC must be guaranteed
- Ventilation holes must be kept clear
- If a hard disk is installed, this must also be approved for permanent operation by its manufacturer.

Fanless and quiet

The Shuttle XPC all-in-one X50N uses a passive thermal module to lead heat out of the case quickly and evenly. The unique fanless design makes it perfect to be used in noise-sensitive environments. As an additional benefit, fanless cases rarely gather dust on the inside and stay cleaner than others. So it's not only quiet and low in energy use, but also virtually maintenance-free.

Protection Class IP54

The front panel of the Shuttle XPC all-in-one X50N is dust-protected and protected from splashing of water according to IP protection class 54. Consequently, this All-in-One PC can be used for those indoor applications, where the touchscreen may be exposed to humidity and occasional splashing of water. This is particularly welcome in restaurants, laboratories, production or other places.

Optimised Cable Management

Most of the connectors are now located at the back panel facing down. This leads to an effective cable management making for a clean, tidy appearance on the desk. On the left side sit those connectors which need to be accessed from the front: the power button and two USB ports.

Connects up to two displays

The Shuttle XPC all-in-one X50N features two video outputs: one analog D-Sub/VGA connector and one HDMI 2.0b connector, which even supports UHD/4K resolution. Two separate displays can be connected in extended mode. Now add the built-in display of the X50N and there are three displays showing different content.

Hidden Power Button

The power button can be deactivated by Jumper JP1 to prevent unauthorised use.
Still, it can be used with a straightened paper clip (see photo).
A hidden Clear CMOS is also available in order do reset the BIOS settings.

VESA mount *)

The stand on the rear can easily be removed to unveil four VESA mounting screw holes that can be used for mounting arms and other mounting devices from a variety of manufacturers.

*) VESA mount is not included. Shuttle recommends the optional Shuttle Stand POV21.

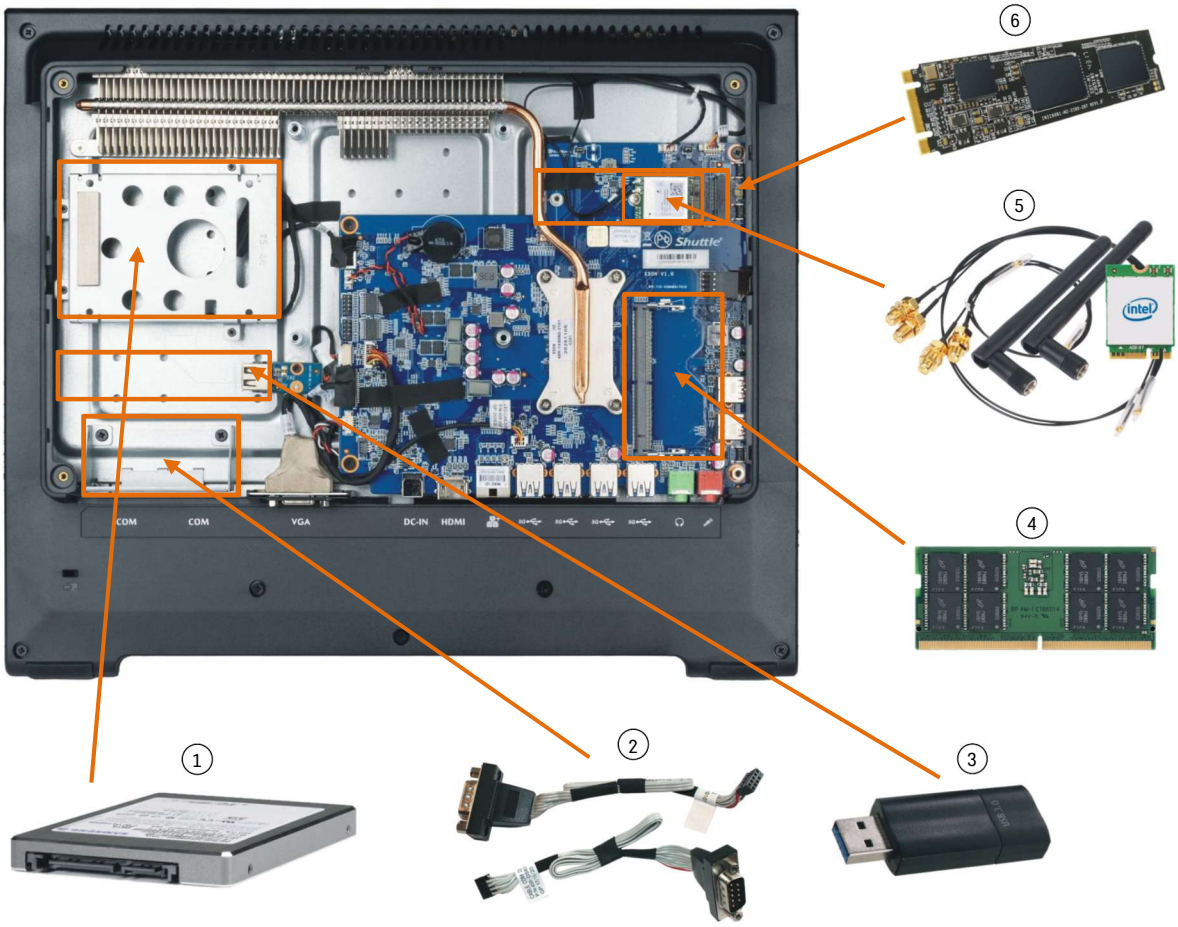
Black and White versions available

Choose the right colour for your application. As a rule, black is preferred for use in the office, as a POS system in retail or as a control unit in manufacturing. The white version is often used in the health sector, in the kitchen area or as a POS system in the cosmetics/massage studio.

Front and Back Panel

1. Stand
   (a) Stand mounting plate
   (b) VESA cover
   (c) 100 x 100 mm VESA mount
2. 4x Perforation for external antennas
3. Full HD Webcam
4. Microphone
5. Touchscreen LC-display
6. 2x speakers (stereo)
7. Stylus with holder
8. Power button
9. Hole for hidden power button
10. 4x USB 3.2 Gen 2 (10 Gbps, red)
11. Hole for hidden Clear CMOS button
12. Power LED
13. Hard disk LED
14. Openings for ventilation
15. Name plate (rating label)
16. Hole for Kensington lock
17. 2x D-Sub COM port (optional)
18. D-Sub/VGA video output
19. DC-input for power adapter
20. HDMI 2.0b video output
21. RJ45 network port (2.5G LAN)
22. 4x USB 3.2 Gen 1 (5 Gbps, blue)
23. Audio Line-out (headphones)
24. Microphone input

Installable Components



1. **2.5" SATA Drive**
   Hard disk or SSD, max. 9.5 mm in height
2. **Two COM Ports (Serial Interface)**
   With 2x Shuttle Accessory **PCP11** you can install two serial COM ports (1x RS232 and 1x RS232/422/485)
3. **Internal USB Port**
   Internal USB 2.0 Type A connector for expansion sticks such as flash memory or LTE. Max. 100 mm in length.
4. **DDR5 SO-DIMM memory**
   max. 1x 16 GB DDR5-4800 or higher clock rate
5. **WLAN Upgrade**
   An 802.11ac (1T1R) WLAN function with internal antennas is already pre-installed. With the Shuttle Accessory **WLN-M1** it can be upgraded to 802.11ax (2T2R) with two external antennas.
6. **M.2-2280 SSD Card**
   supports SSD cards with SATA or PCIe interface

Optional Shuttle Accessory:
Robust Dual VESA Stand **POV21**

The flexible design supports one or two AIO-PCs or Displays with 75x75 mm or 100x100 mm VESA mount up to 21.5" display size and a total weight of up to 20 kg. POV21 features optimised cable management with magnetic back cover and is flexible and easy to adjust.

Range of Applications (Examples)

Digital Signage
Visual advertising,
Info Terminal

POS
Checkout system in Retail Stores,
Restaurants, Hotels

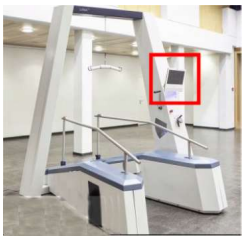
POS Radio
Playing advertising
and music

Call System
e.g. for nurses (hospital)
or security personnel

Smart Home Control
Surveillance,
Home Automation

Device Control
e.g. for copy
machines

Device Control
e.g. for health services or fitness
equipment



Communication Device
e.g. for the elderly

Visualisation
e.g. for industrial production machines

On a boat
e.g. for navigation and entertainment

Data Collector
e.g. Recording of
working hours

Entertainment
e.g. at the dentist or
in the waiting room

Shuttle Product Comparison: X50N versus X50V9

MODEL	X50N Series	X50V9 Series
Processor	Intel N150, TDP=6W Code name: "Twin Lake"	Intel Core Gen 12/13, TDP=15W Code name: "Alder/Raptor Lake-U" **X50V9:** Celeron 7305 (Gen12) **X50V9U3:** Core i3-1315U (Gen13)
Operation System Support	Windows 11 – 64-bit Linux – 64-bit	Windows 10/11 – 64-bit Linux – 64-bit
RAM memory (max.)	Max. 1x 16 GB DDR5-4800 SO-DIMM	Max. 2x 32 GB DDR5-5200 SO-DIMM (Celeron version: DDR5-4800)
M.2 Slots for SSDs	One M.2-2280M slots support 1x PCIe/NVMe or SATA SSDs	Two M.2-2280M slots support 1x PCIe/NVMe or SATA SSDs 1x SATA SSD or WWN04 accessory
2.5" Bay	Supports one 2.5" drive SSD or Hard Disk (max. 9.5 mm)	Supports one 2.5" drive SSD or Hard Disk (max. 9.5 mm)
LAN	Intel 226LM **2.5G** LAN	Intel i219 Gigabit LAN
WLAN	Realtek RTL8821CE (WLAN-ac and BT 4.2) with two internal antennas	Realtek RTL8821CE (WLAN-ac and BT 4.2) with two internal antennas
Audio	Realtek ALC888S (HD audio)	Realtek ALC888S (HD audio)
Connectors left	Power Button Hole with hidden Power Button 2x USB 3.2 Gen 2 (10 Gbps, red) Hole with hidden Clear CMOS Button	Power Button Hole with hidden Power Button 2x USB 3.2 Gen 1 (5 Gbps, blue) Hole with hidden Clear CMOS Button
Connectors bottom	HDMI 2.0b VGA Port 4x USB 3.2 Gen 1 (5 Gbps, blue) 2.5G LAN (RJ45) Audio Line-out Microphone input DC input (supports 12V or 19V) Optional 2x COM (D-Sub)	HDMI 2.0b VGA Port 2x USB 3.2 Gen 1 (5 Gbps, blue) 2x USB 3.2 Gen 2 (10 Gbps, red) Gigabit LAN (RJ45) Audio Line-out Microphone input DC input (supports 12V or 19V) Optional 2x COM (D-Sub)
Perforation for external antennas	4x Perforation (7 mm)	4x Perforation (7 mm)
Power Adapter	65W/19V power adapter 3-pin AC plug (Schuko with PE) DC-input supports 12V and 19V	90W/19V power adapter 3-pin AC plug (Schuko with PE) DC-input supports 12V and 19V
Optional Shuttle Accessories	**WLN-M1** - WLAN Upgrade Kit 2x **PCP11** - 2x COM **POV21** (Robust Dual VESA Stand)	**WLN-M1** - WLAN Upgrade Kit 2x **PCP11** - 2x COM **POV21** (Robust Dual VESA Stand) **WWN04** – 4G/5G kit for mobil network

Product Comparison: Shuttle XPC All-in-One Models

Chassis	Display Size / Pixel / Type	Processor Type	Product Name	Chassis Colour
	11.6" 1366 x 768 Capacitive Multitouch	N-Series	**P25N**	**Black**
	15.6" 1366 x 768 Resistive Singletouch	N-Series	**X50N**	**Black, White**
		Celeron	**X50V9**	**Black, White**
		Core i3	**X50V9U3**	**Black, White**
	15.6" 1920 x 1080 Capacitive Multitouch	Celeron	**P55U**	**Black**
		Core i3	**P55U3**	**Black**
	19.5" 1600 x 900 Capacitive Multitouch	Celeron	**P92U**	**Black, White**
		Core i3	**P92U3**	**Black, White**
		Core i5	**P92U5**	**Black**

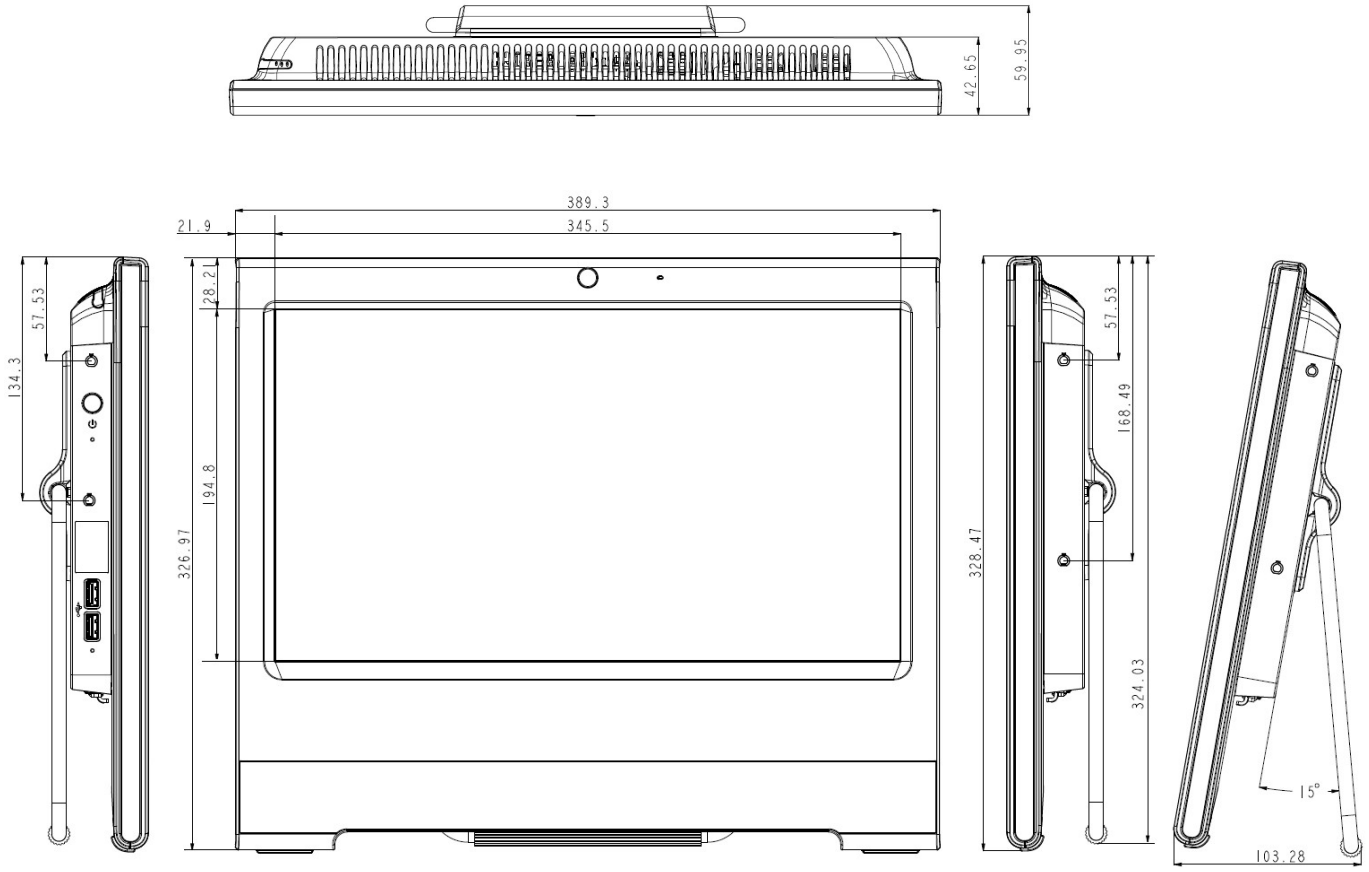
SHUTTLE XPC all-in-one BAREBONE X50N Black — SPECIFICATIONS

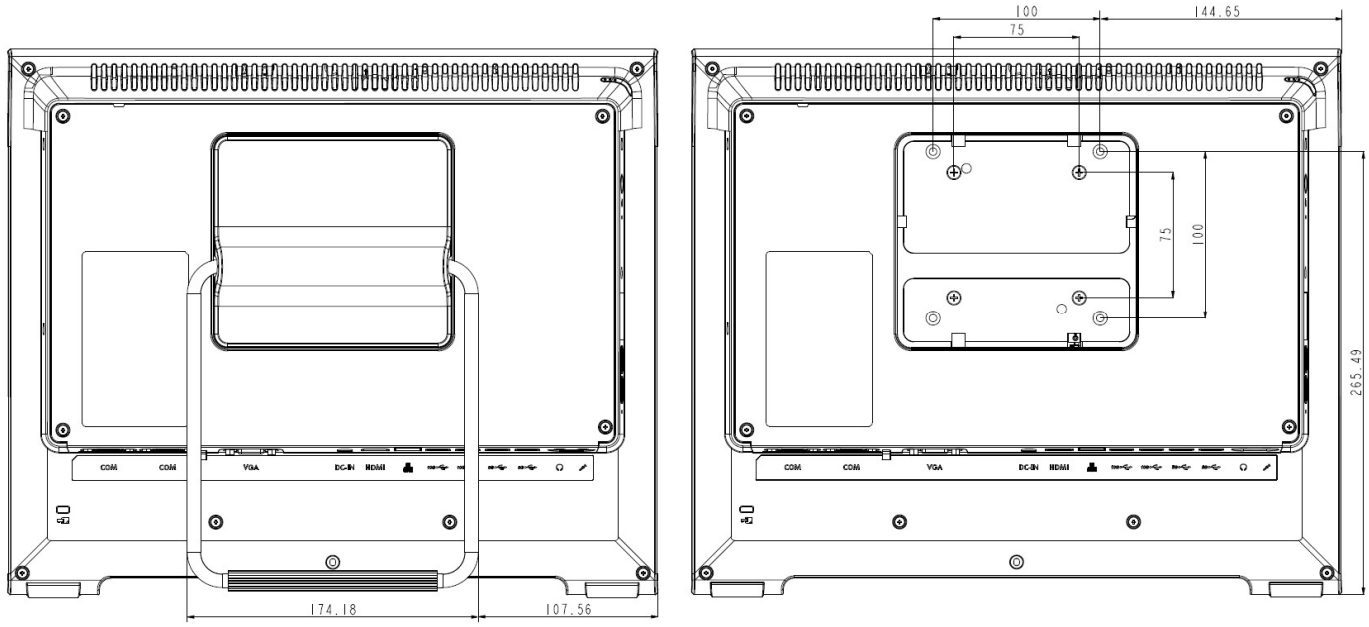
FANLESS AND SILENT	Passive heatpipe cooling, no fan noise at all Perfect to be used in noise-sensitive environments Fanless, dust-free and thus virtually maintenance-free
24/7 NONSTOP OPERATION	This device is approved for 24/7 permanent operation. Requirements: - Free circulation of air amongst the PC must be guaranteed. - Ventilation holes must be kept clear. - If a hard disk is installed, this must also be approved for permanent operation by its manufacturer.
IP54 PROTECTED	The front panel is dust-protected and protected from splashing of water according to protection class IP54.
CHASSIS	Colour: black Dimensions: 391 x 327 x 42 mm (W x H x D) 100mm VESA mount capable Mounting hole for Kensington lock Weight: 3.26 kg net, 4.5 kg gross
OPERATING SYSTEM	This system comes without operating system. It is compatible with: - Windows 11 - 64-bit - Linux - 64-bit
TOUCHSCREEN	Touchscreen function supports fingertip input Resistive 5-wire single-touch technology Stylus for the built-in touchscreen
15.6″ DISPLAY	39.6 cm / 15.6" LC-display, ratio: 16:9 wide-screen panel Resolution: 1366 x 768 = 1.05 Megapixel Backlight unit: High power LED, Luminance: 220 cd/sqm Glass thickness: 3.2 mm
PROCESSOR	Model: Intel® Processor N150 Max. Turbo clock frequency: 3.6 GHz Code name: "Twin Lake" (Alder Lake-N series) Intel 7 (10 nm) process, BGA1264 package (soldered) CPU cores / Threads: 4 / 4 L2 Cache: 6 MB Thermal Design Power (TDP): 6 W System-on-Chip processor (SoC) with integrated graphics processor, no chipset required Passive processor cooling without fan
INTEGRATED GRAPHICS	Intel® Graphics GPU clock frequency: max. 1000 MHz Execution Units (EUs): 24 Supports DirectX 12.1, OpenGL 4.6, OpenCL 3.0
SUPPORTS TRIPLE DISPLAY	Up to three displays simultaneously Two video ports support two additional independent screens: 1) HDMI 2.0b digital audio/video port supports up to 3840 x 2160 pixels resolution at 60 Hz refresh rate (2160p60) 2) VGA / D-Sub analog video port supports 1920 x 1080 pixels resolution at 60 Hz refresh rate (1080p60) Special conditions for operation in Multi-Monitor mode: 1) Clone mode: all displays show the same content at 1366x768 resolution 2) Extended mode: all displays show different content
BIOS	AMI BIOS in 32 MByte EEPROM with SPI interface Supports Power fail resume / always on Supports Wake-on-LAN (WOL) from S3, S4, S5 ACPI states Supports hardware monitoring and Watchdog functionality Supports Firmware TPM v2.0 functionality
MEMORY SUPPORT	1x SO-DIMM slot with 262 pins Supports DDR5-4800 (PC5-38400) SDRAM at 1.1 V Supports a maximum capacity of 16 GB Supports DDR5 memory modules with higher frequency rating Supports two unbuffered DIMM modules (no ECC or registered)

2.5" BAY FOR HDD/SSD	Hard disk drive / SSD Supports one SATA hard disk or one SATA SSD drive in 6.35 cm / 2.5" format The SATA 3.0 interface supports up to 600MB/s data transfer speed (6 Gbit/s) Supports one drive with up to 9.5 mm in height SATA data/power cable pre-installed
M.2 SLOT FOR SSD CARD	M.2-2280 M-key slot Interfaces: PCI-Express Gen. 3.0 x2 and SATA Supports M.2 SSD cards with a width of 22 mm and a length of 80 mm (type 2280) Supports SATA SSDs (BM-Key) or NVMe PCIe SSDs (M-Key)
WEBCAM	Integrated Full HD webcam (1920 x 1080 pixels) USB interface
MICROPHONE AND SPEAKERS	Front panel with integrated Electret Condenser Microphone and 2x 2 W speakers
INTEGRATED AUDIO	Realtek ALC888S (HD-Audio) Two analog audio connectors (3.5 mm) on the bottom side: 1) Line-out (head-phones) 2) Microphone input Digital Audio is supported via the HDMI output.
WIRED NETWORK	Intel i226LM Ethernet Controller Supports 100 / 1.000 / 2.500 MBit/s operation Supports WAKE ON LAN (WOL) from S3, S4 modes Supports network boot by Preboot eXecution Environment (PXE)
WIRELESS NETWORK (WLAN)	WLAN controller Card: Realtek RTL8821CE WLAN antennas: two internal antennas Supports WiFi IEEE 802.11b/g/n/ac on the 2.4 / 5 GHz band, 1T1R Supports 20 / 40 / 80 MHz channel bandwidth Security: supports WPA(-PSK), WPA2(-PSK), WEP 64/128 bit, IEEE 802.11x, IEEE 802.11i Supports Bluetooth 4.2 on the 2.4 GHz band The M.2-2230 Key A+E slot supports PCIe Gen3 x1, USB 2.0 und CNVi
FRONT LEDs	Power LED (blue) HDD/SSD LED (orange)
CONNECTORS LEFT SIDE	Power button 2x USB 3.2 Gen 2 (max. 10 Gbps, red) Hole with hidden power button (onboard micro switch) Hole with hidden Clear CMOS button (onboard micro switch)
CONNECTORS BOTTOM SIDE	HDMI 2.0b (supports digital video and digital audio) VGA connector (D-Sub 15 pol., analog video) 4x USB 3.2 Gen 1 (max. 5 Gbps, blue) Gigabit Network (2.5G LAN, RJ45, Intel i226LM) Audio Line-out / head-phones (3.5 mm jack) Microphone input (3.5 mm jack) DC input for external power adapter (5.5 / 2.5 mm) Optional: 2x COM/serial RS232 D-Sub
CONNECTORS ONBOARD	Internal USB 2.0 type A connector for a USB stick Serial ATA (6 Gbps) data/power connector 2x serial interfaces for optional COM ports (each 2x5-pin, 2 mm pitch) Other available connectors are occupied by integrated components.
OPTIONAL ANTENNAS	The chassis features four perforated 6.5 mm holes for optional antennas mounted with an (RP-)SMA connector for wireless network such as WLAN or WWAN (e.g. 4G/5G) (see section "Optional Accessories")
POWER ADAPTER	External 65 W AC/DC power adapter (fanless) AC Input: 100 ~ 240 V AC, 50 ~ 60 Hz, max. 1.5 A Automatic AC voltage adjust DC Output: 19 V, max. 3.42 A, max. 65 W DC Connector: 5.5 / 2.5 mm (outer/inner diameter) DC cable length: ca. 170 cm AC cable length: ca. 170 cm AC cable with 3-pin Micky MM C6 and Schuko earthed safety plug

DC INPUT CONNECTOR	DC Input Connector: 5.5 / 2.5 mm (outer/inner diameter) The DC-input of the computer supports an external power source with either 12V±5% or 19V±5%.
SUPPLIED ACCESSORIES	Multilingual Quick Guide Driver DVD for Windows 11 External Power Adapter (65W / 19V) AC Power cord with protective-earth contacts 2x M3x4 silver screws for mounting M.2 SSD cards 4x M3x4 black screws for mounting a 2.5" SATA drive Thermal pad 70 x 20 x 5.25 mm for cooling an M.2 SSD card
OPTIONAL ACCESSORIES	**1) WLAN Kit WLN-M1** (Intel AX200 card + two external antennas) An 802.11ac (1T1R) WLAN function with internal antennas is already pre-installed and can be upgraded to 802.11ax (2T2R) with two external antennas with this kit. **2) COM port adapter 2x PCP11:** provides two serial RS232 COM ports on the bottom side **3) Robust VESA Stand POV21:** supports one or two AIO-PCs/Displays with 75x75 or 100x100 mm VESA (max. 21.5" display size and 20 kg total weight).
ENVIRONMENTAL SPECIFICATIONS	Operating temperature: 0~40 °C Humidity: 10~90 %, non-condensing
CERTIFICATIONS / COMPLIANCE	EMI: CE, UKCA, FCC, BSMI, RCM, VCCI Safety: CB (IEC 60950/62368), cTUVus (UL 62368), BSMI Other compliances: RoHS, ErP Lot3, Energy Star v8.0
CONFORMITY	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) 2014/30/EU relating to electromagnetic compatibility (EMC), (2) 2014/35/EU relating to Electrical Equipment designed for use within certain voltage limits (LVD), (3) 2009/125/EC relating to eco design requirements for energy-related products (ErP), (4) 2014/53/EU Radio Equipment Directive (RED)

X50N Series – Technical Drawings





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