

# Features and Specifications

This chapter lists the features and specifications of the Nitro N50-620 Desktop Computer.

**NOTE** The items listed in this section are for reference only. The exact configuration of your PC depends on the model purchased.

## System Features

Component	Description
Operating system support	<ul style="list-style-type: none"> <li>• Microsoft Windows 10 ML x64</li> <li>• Microsoft Windows 10 SL x64</li> <li>• Microsoft Windows 10 CN x64</li> <li>• UEFI Shell</li> </ul>
Processor	<ul style="list-style-type: none"> <li>• Socket LGA1200</li> <li>• Supports the following Intel Rocket Lake-S processors:               <ul style="list-style-type: none"> <li>– Intel Core i9 11900 2.5G 16M 3200 Octa Core 65W</li> <li>– Intel Core i9 11900F 2.5G 16M 3200 Octa Core 65W</li> <li>– Intel Core i7 11700 2.5G 16M 3200 Octa Core 65W</li> <li>– Intel Core i7 11700F 2.5G 16M 3200 Octa Core 65W</li> <li>– Intel Core i5 11400 2.6 12M 3200 Hexa Core 65W</li> <li>– Intel Core i5 11400F 2.6 12M 3200 Hexa Core 65W</li> </ul> </li> </ul>
Chipset	PCH: Intel B560
Graphics controller	One PCIe x16 graphics card (nVidia RTX3060Ti / nVidia RTX2060 / nVidia GTX1660 / nVidia GTX1650)
Hardware monitor	Super I/O
Memory	Support DDR4 1.2V 3200 U-DIMMs (4GB/8GB/16GB) dual channel up to 64GB total memory
Expansion options	<ul style="list-style-type: none"> <li>• One PCI Express x16 slot (reserved for GPU card installation)</li> <li>• Three M.2 slots</li> </ul>
Display	No on-board graphics controller
Audio	Realtek ALC662-VD / ALC897 5.1 Channel High Definition Audio Codec
I/O ports	<ul style="list-style-type: none"> <li>• Front panel               <ul style="list-style-type: none"> <li>– One USB 3.2 Gen2 Type A port</li> <li>– One USB 3.2 Gen2 Type C port</li> <li>– One Microphone jack</li> <li>– One headset combo jack (does not support microphone only device)</li> </ul> </li> <li>• Rear panel               <ul style="list-style-type: none"> <li>– One USB 3.2 Gen2x2 Type C port</li> <li>– Two USB 3.2 Gen1 Type A ports</li> <li>– Two USB 2.0 ports</li> <li>– One Ethernet jack (RJ45)</li> <li>– One Microphone jack</li> </ul> </li> </ul>

Component	Description
I/O ports (Cont.)	<ul style="list-style-type: none"> <li>– One line-out jack</li> <li>– One line-in jack</li> </ul>
LED display and buttons	<ul style="list-style-type: none"> <li>• Power LED</li> <li>• Power button</li> </ul>
Hard disk drive (HDD)	<ul style="list-style-type: none"> <li>• Two HDD bays supporting 3.5-inch or 2.5-inch SATA HDDs</li> <li>• Support 7200 rpm SATA HDD in 1TB/2TB/3TB capacities</li> </ul>
Solid state drive (SSD)	<ul style="list-style-type: none"> <li>• Two M.2 slots supporting Solid State Drives (SSD)</li> <li>• Support SSD in 256GB/512GB/1TB capacities</li> </ul>
Connectivity	<ul style="list-style-type: none"> <li>• Wired LAN: Onboard 10/100/1000 Ethernet (Killer E2600/RTL8118AS)</li> <li>• WLAN option: Intel Jefferson Peak Wireless LAN+BT (802.11 ac)</li> </ul>
Power supply	<ul style="list-style-type: none"> <li>• FR 300W power supply unit (Active PFC)</li> <li>• FR 500W power supply unit (Active PFC)</li> </ul>
Security	<ul style="list-style-type: none"> <li>• Firmware Trusted Platform Module (fTPM)</li> <li>• BIOS-based user and supervisor passwords</li> <li>• Kensington lock</li> </ul>
System BIOS	<ul style="list-style-type: none"> <li>• AMI BIOS with 32 MB SPI Flash ROM</li> <li>• Supports ACPI revision 6.2 standard</li> <li>• Supports Plug and Play, STR(S3)/STD(S4), hardware monitor, Multi Boot, and DMI protocols</li> </ul>

## Physical Specifications

Aspect	Description
Chassis dimension (W x H x D)	175mm x 376mm x 350mm (6.9in x 14.8in x 13.8in)
System weight	7.45kg (16.42lb)
Mainboard form factor	DTX compatible
Mainboard dimensions (W x H)	200mm*321mm, 6 Layers

## Environmental Requirements

### Temperature

Item	Description
Operating	5 to 35 °C (41 to 95 °F)
Non-operating	Packed: -20 to 60 °C (-4 to 140 °F) Unpacked: -10 to 60 °C (14 to 140 °F)

### Humidity

Item	Description
Operating	15% to 80% RH non-condensing
Non-operating	10% to 90% RH non-condensing at 40 °C

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## System Tour

The pictures and tables in this section illustrate the physical outlook of the computer.

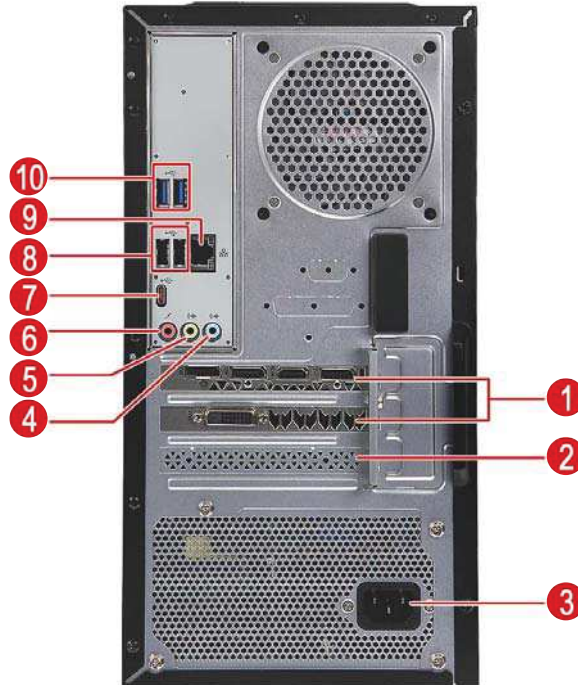
### Front View



Item	Component
1	Power button LED
2	Power button
3	USB 3.2 Gen2 Type A port
4	USB 3.2 Gen2 Type C port
5	Microphone jack
6	Headset combo jack (does not support microphone only device)
7	Wireless charger LED

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## Rear View



Item	Component
1	Graphics card
2	Expansion Board slot
3	Power connector
4	Line-in jack
5	Line-out jack
6	Microphone jack
7	USB 3.2 Gen2x2 Type C port
8	USB 2.0 ports
9	LAN connector
10	USB 3.2 Gen2 Type A ports

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# Hardware Specifications

## Processor

Item	Specification
Socket	Socket LGA1200
Package type	14 nm
CPU type	Supports the following Rocket Lake-S processors: <ul style="list-style-type: none"><li>– Intel Core i9 11900 2.5G 16M 3200 Octa Core 65W</li><li>– Intel Core i9 11900F 2.5G 16M 3200 Octa Core 65W</li><li>– Intel Core i7 11700 2.5G 16M 3200 Octa Core 65W</li><li>– Intel Core i7 11700F 2.5G 16M 3200 Octa Core 65W</li><li>– Intel Core i5 11400 2.6 12M 3200 Hexa Core 65W</li><li>– Intel Core i5 11400F 2.6 12M 3200 Hexa Core 65W</li></ul>

## Chipset

Item	Specification
System chipset	PCH: Intel B560
Hardware monitor	ECIO IT8637

## Memory

Item	Specification
Controller	Integrated in the Intel Rocket Lake-S processors
Number of DIMM slot	4
Maximum memory	64GB (using four 16GB modules)
Data rate	3200 MT/s
DIMM type	DDR4 1.2V U-DIMMs
Supported capacities	4GB, 8GB, 16GB
Vendor and models	<ul style="list-style-type: none"><li>• KINGSTON – 4GB MTA4ATF51264AZ-3G2J1 / 8GB ACR32D4U2S8HD-8X</li><li>• MICRON – 4GB MTA4ATF51264AZ-3G2J1 / 8GB MTA4ATF1G64AZ-3G2E1</li></ul>
Population rule	Please refer to <a href="#">“Reinstalling the Memory Modules”</a> on page 78 for Memory Population Matrix Table.

## Hard Disk Drive

Item	Specification
Controller	Integrated in the Intel B560 chipset
Number of HDD bays	2
Form factor	3.5-inch or 2.5-inch
Interface	SATA 3.0
Supported capacities	1TB, 2TB, 3TB
Vendor and models	<ul style="list-style-type: none"><li>• Seagate – 2TB ST2000DM008</li><li>• Toshiba – 1TB/2TB/3TB Mars</li><li>• Western Digital – 1TB XL1000C</li></ul>

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## Solid State Drive (SSD)

Item	Specification
Controller	Integrated in the Intel B560 chipset
Number of SSD bays	2
Form factor	M.2 2242 / 2280
Interface	PCIe V3.0 or V4.0 / SATA 3.0
Supported capacities	256GB, 512GB, 1TB
Vendor and models	<ul style="list-style-type: none"><li>• Hynix – 256GB HFM256GD3JX016N / 512GB HFM512GD3JX016N</li><li>• Samsung – 256GB MZVL2256HCHQ-00B07 / 512GB MZVL2512HCJQ-00B07 / 1024GB MZVL21T0HCLR-00B07</li><li>• Western Digital – 512GB SDBPNPZ-512G-1114</li></ul>

## Audio

Item	Specification
Controller	Realtek ALC662-VD / ALC897 5.1 Channel High Definition Audio Codec
Connectors	Three audio jacks

## Ethernet

Item	Specification
Controller	<ul style="list-style-type: none"><li>• Killer E2600</li><li>• Dragon LAN RTL8118AS</li></ul>
LAN protocol	10/100/1000 Mbps
LAN connector type	RJ-45

## Wireless LAN

Item	Specification
WLAN module	<ul style="list-style-type: none"><li>• Intel 9462 Jefferson Peak WLAN AC + BT</li><li>• Intel 9560 Jefferson Peak WLAN AC + BT</li><li>• Intel AX201 Harrison Peak WLAN AX + BT</li></ul>
Form factor	M.2 2230 / 1630
Interface	PCIe V3.0
Protocol	WLAN M.2 2X2 AC/AX + BT 2230

## SATA Interface

Item	Specification
SATA Controller	Integrated in the Intel B560 chipset
Connectors	Two SATA 3.0 ports

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## PCIe Interface

Item	Specification
Controller	<ul style="list-style-type: none"><li>Integrated in the Intel Rocket Lake-S processors (PCIe x16 / M.2 SSD)</li><li>Integrated in the Intel B560 chipset (M.2)</li></ul>
Connectors	<ul style="list-style-type: none"><li>One PCI Express x16 slot (PCIe V4.0)</li><li>One M.2 2230 WLAN+BT slot (PCIe V3.0)</li><li>One M.2 2242 / M.2 2280 SSD slot (PCIe V3.0 / V4.0)</li><li>One M.2 2242 / M.2 2280 SSD slot (PCIe V3.0 / V4.0)</li></ul>

## Keyboard and Input Devices

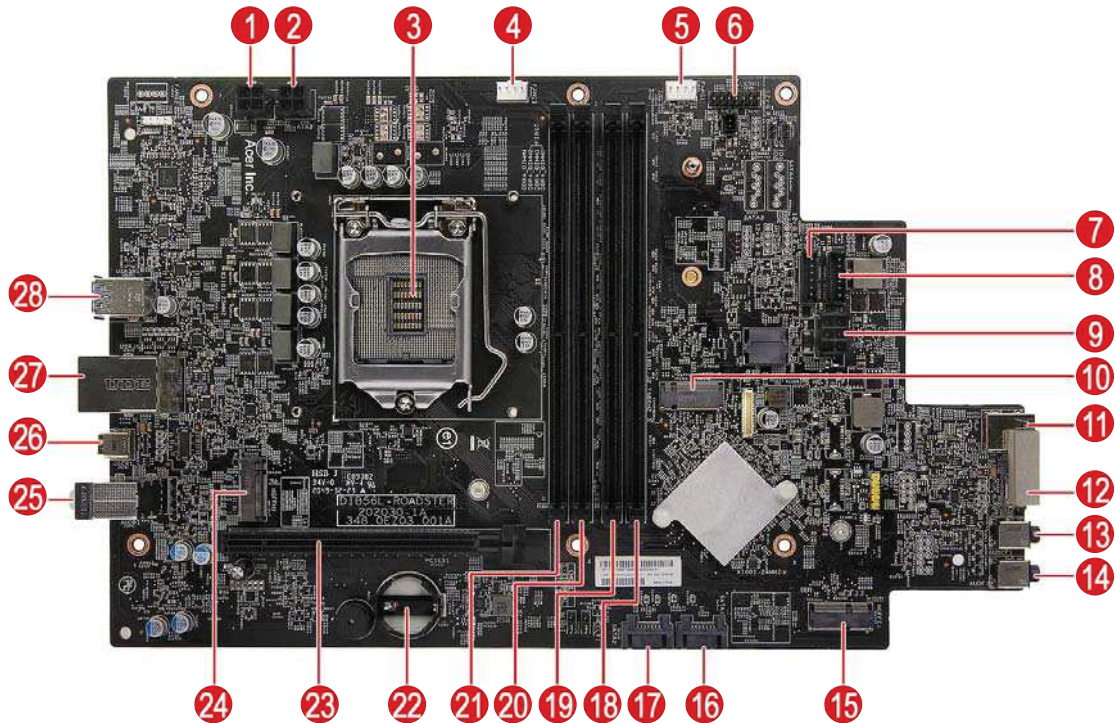
Item	Specification
Controller	ECIO IT8732
Connectors	Seven USB ports (two in front and five on rear)

## Power Supply Unit

Item	Specification
Type	<ul style="list-style-type: none"><li>FR 300W power supply unit (Active PFC)</li><li>FR 500W power supply unit (Active PFC)</li></ul>
Input	100-240V
Output (max.)	300W, 500W
Vendor and models	<ul style="list-style-type: none"><li>Chicony Power D17-300P2A 300W Active PFC 100-127V/220V-240V</li><li>Chicony Power D19-500P1A 500W Active PFC 100-127V/220V-240V</li><li>LITE-ON PA-2301-3AB-ROHS 300W Active PFC 100-127V/200-240V</li><li>LITE-ON PA-4501-1AC 500W Active PFC 100-127V/200-240V</li></ul>

# Mainboard Layout

This section shows the major mainboard components.



No.	Code	Component	No.	Code	Component
1	ATX2	4-Pin ATX power connector	15	NGFFE1	M.2(2230) E-key WLAN slot
2	ATX3	4-Pin ATX power connector	16	SATA1	SATA connector
3	CPU1	CPU	17	SATA2	SATA connector
4	FANC1	CPU fan header	18	DIMM1	DDR4 240-pin UDIMM slots
5	FANS1	System fan header	19	DIMM3	DDR4 240-pin UDIMM slots
6	LEDH1	Power button/LED cable header	20	DIMM2	DDR4 240-pin UDIMM slots
7	HDPWR2	6-Pin SATA power connector	21	DIMM4	DDR4 240-pin UDIMM slots
8	HDPWR1	6-Pin SATA power connector	22	BT1	Battery slot
9	ATX1	6-Pin ATX power connector	23	PCIES1	PCI Express Gen3 x16 Slot
10	NGFFM2	M.2(2280) M-key SSD2 slot	24	NGFFM1	M.2(2280) M-key SSD1 slot
11	USB3F1	Front panel USB3.2 Gen2 Type A connector	25	AUDR1	Rear panel audio jack
12	USCF1	Front panel USB3.2 Gen2 Type C connector	26	USCR1	Rear panel USB 3.2 Gen2x2 Type C connector
13	AUDCF1	Front panel audio combo jack	27	U2RJ1	USB2.0*2 + LAN connector
14	AUDF1	Front panel audio jack	28	USB3R1	Rear panel USB 3.2 Gen1 Type A connector