

# ThinkCentre M90n-1 Nano IoT Platform Specifications

Product Specifications Reference (PSREF)

Processor	Intel® Celeron® or 8th Generation Intel Core™ i3 Processor						Manageability Security chip Security features	None Discrete TPM 2.0, TCG Certified ● Security slot (in rear for optional Kensington® MicroSaver® cable) ● Chassis intrusion switch ● Power-on password ● Administrator password ● Hard disk password	● Boot sequence control ● Boot without keyboard and mouse ● Individual USB port disablement
	Processor	Cores / Threads	Frequency Base/Max(GHz)	Cache	Memory Support (Up to)	Integrated Graphics			
	Celeron 4205U	2 / 2	1.8G	2 MB	DDR4-2133	UHD 610			
	Core i3-8145U	2 / 4	2.1G / 3.9G	4 MB	DDR4-2400	UHD 620			
Memory	4GB / DDR4-2666* / soldered to systemboard, no sockets, non-ECC * System automatically clocks down for the processors with lower memory controller								
Storage	Support up to two M.2 SSD <i>Some:</i> M.2 2280 SSD / PCIe NVMe, PCIe 3.0 x 4* <i>Some:</i> M.2 2242 SSD / PCIe NVMe, PCIe 3.0 x 2 <i>Some:</i> Intel Optane™ Memory H10 with Solid State Storage, M.2 2280, PCIe NVMe 3.0 x 4 (not support Celeron) * M.2 SSD / Optane with SSD in PCIe 3.0 x 2 M.2 slot can only run at PCIe 3.0 x2						Keyboard	<i>Some:</i> Lenovo Calliope Keyboard (USB connector), black <i>Some:</i> Lenovo Traditional Keyboard (USB connector), black <i>Some:</i> Lenovo Calliope Wireless Keyboard (2.4GHz via USB receiver), black	
RAID	RAID 0/1 support (RAID preset only available via special bid model)						Mouse	<i>Some:</i> Lenovo Calliope Mouse (USB connector), black <i>Some:</i> Lenovo Fingerprint Mouse (USB connector), Windows Hello support, black <i>Some:</i> Lenovo Calliope Wireless Mouse (2.4GHz via USB receiver), black	
Optical	None						Mechanical	Nano (fanless 0.55L), black color; metal case Four M.2 slots: two for M.2 SSD (one PCIe 3.0 x4 and one PCIe 3.0 x2), one for WLAN, and one for WWAN	
Graphics	Intel UHD Graphics 610/620 in processor, uses main memory, DirectX® 12, one DisplayPort™, one USB 3.1 Type-C Gen2 with display function, up to 2 independent displays; <i>Max resolution:</i> 4096x2304 (DP)@60Hz; 4096x2304 (Type-C)@60Hz;								
Monitor cable	Optional DP to VGA dongle, DP to HDMI dongle, Type-C to VGA dongle, Type-C to HDMI dongle, Type-C to DP dongle								
Chipset	Intel SoC (System on Chip) platform								
Front ports (Std.)	2x USB 3.1 Gen2, 1x USB 3.1 Type-C Gen 2, one headphone / microphone combo jack (3.5mm), 2x serial						Mounting	<i>Some:</i> VESA mount bracket kit, supports VESA 75mm <i>Some:</i> VESA mount bracket kit with adapter holder, supports VESA 75mm <i>Some:</i> DIN rail mount bracket kit	
Rear ports (Std.)	<i>With Celeron:</i> 1x USB 2.0, 1x USB 3.1 Type-C Gen 2 (with display function, support power-in [20V, > 45W]), 1x ethernet (RJ-45), 1x DisplayPort <i>With Core i3:</i> 1x USB 3.1 Gen2, 1x USB 3.1 Type-C Gen 2 (with display function, support power-in [20V, > 45W]), 2x ethernet (RJ-45), 1x DisplayPort						Floor Stand	None	
I/O box*	Optional I/O box, connect to the USB 3.1 Type-C Gen 2 port of M90n-1 Nano, extends 2x serial, 2x ethernet (RJ-45, I/O box is equipped with Realtek RTL8153B, gigabit ethernet), 1x DI (Digital Input) connector, 1x DO (Digital Output) connector * Depending on many factors, actual data transfer speed may be lower than theoretical speed						Power supply	<i>Some:</i> 65 watts AC/DC adapter*, autosensing, 88% PSU <i>Some:</i> 65 watts AC/DC adapter (wide temperature)*, autosensing, 88% PSU (only for Machine Type 11AS) * Not for the models with I/O box	
Audio support	Realtek ALC233VB / internal speaker (1watt)						Limited warranty	<i>Some:</i> <b>1-year, limited onsite service</b> / service upgrades available <i>Some:</i> <b>3-year, limited onsite service</b> / service upgrades available	
WLAN	<i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822CE (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Realtek RTL8822CE (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Wireless-AC 9462 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 1x1 <i>Some:</i> 11ac wireless, M.2 Card, Intel Wireless-AC 9560 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, 2x2 <i>Some:</i> 11ac wireless, M.2 Card, Intel Wireless-AC 9560 (dual band), Wi-Fi + Bluetooth 5.0 combo adapter, Intel vPro technology support, 2x2						Preload	<b>Preloaded operating system</b> <i>Some:</i> Windows® 10 Pro 64-bit <i>Some:</i> Windows 10 Home 64-bit <i>Some:</i> Windows 10 IoT Enterprise (only available via special bid model)	
Bluetooth	<i>Some:</i> Bluetooth 5.0 wireless, integrated in Wi-Fi + BT combo adapter						Environment	ENERGY STAR® 7.1*, EPEAT™ Silver rating (North America)*, ErP Lot 3, TCO 8.0*, TUV ultra low noise verified (on some models), RoHS, WEEE, REACH * Not for the models with I/O box	
Ethernet	<i>With Celeron:</i> Gigabit ethernet, Realtek RTL8111K, 1x RJ-45, Wake on LAN® <i>With Core i3:</i> Two gigabit ethernet, Realtek RTL8111K and RTL8111HN, 2x RJ-45 Wake on LAN®						MIL-SPEC test	MIL-STD-810H* (Low Pressure [Altitude], High Temperature, Low Temperature, Temperature Shock, Humidity, Sand and Dust, Vibration, Shock, Solar Radiation) * Not for the models with I/O box	
							Accessories	For compatible accessories, please go to <a href="http://smartfind.lenovo.com">http://smartfind.lenovo.com</a>	

Note: The specifications above may not be available in all regions.

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