



Intel® Server D50TNP Family

Intel® Server Board D50TNP

Intel® D50TNP Modules

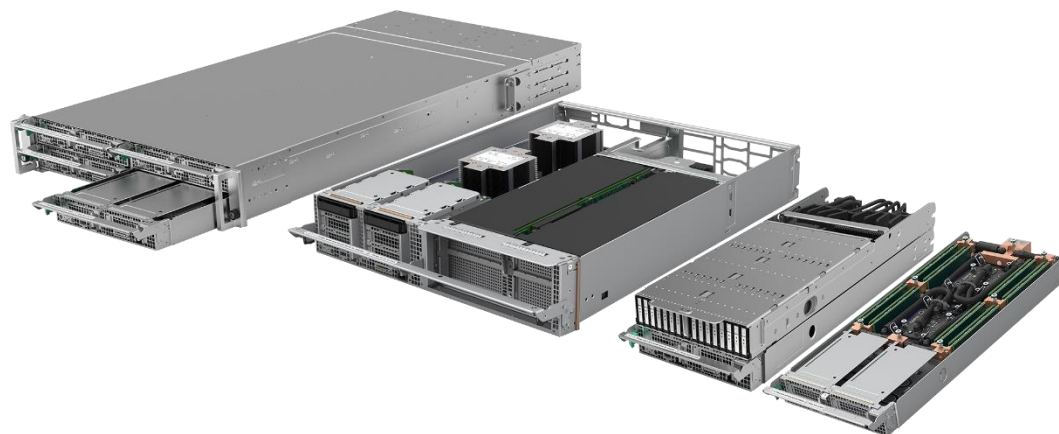
Intel® Server System D50TNP

Configuration Guide

A reference document to identify available Intel® server building blocks, integrated systems, accessories, and spare parts associated with the Intel® Server D50TNP Family.

Rev. 1.4

March 2022



D50TNP

Delivering Breakthrough Data Center System Innovation – Experience What's Inside!

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Document Revision History

Date	Revision	Changes
May 2021	1.0	Initial production release
July 2021	1.1	<ul style="list-style-type: none"> Table 3, Doc Reference table <ul style="list-style-type: none"> Added two DCM documents at end of table Added 3rd Generation Intel® Xeon® Scalable processor TMSDG Table 4, "Intel® Server Board D50TNP Family Features". Updated table. <ul style="list-style-type: none"> Updated Maximum Processor Thermal Design Power (TDP). Added note USB Support. Added Important Note. Chipset. Added information Server Management Processor. Added row. Tables 6, 7, 13, 14. Updated package gross weight and un-package net weight. Table 19, "Miscellaneous Accessory Options". Added Advanced System Management Key
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March 2022	1.4	<ul style="list-style-type: none"> Chapter 1, "Overview". Re-organized Section 1.1, "Product Family Overview". Added section. Section 1.5: "Intel® Server D50TNP Modules Overview". Added note Section 1.6, "Intel® Server System D50TNP / Chassis Overview". Added Table 5. Updated the following tables: Table 7, Table 8, Table 9, Table 10, Table 11, Table 12, Table 13, Table 14, Table 15, Table 16, Table 17, Table 18, Table 19 Minor edits throughout for clarity

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1. Overview

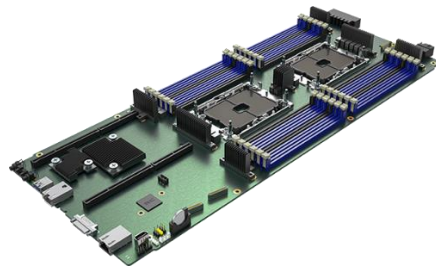
This document provides a catalog of available Intel® boards, modules, chassis, accessories, and spares for the Intel® Server D50TNP Family.

1.1 Product Family Overview

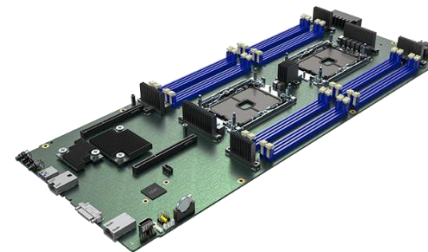
The Intel Server D50TNP Family offers options to support liquid-cooled and air-cooled configurations. All systems within the family are fully configured with 1U or 2U modules.

The core products that define the high-performance, density-optimized Intel Server D50TNP Family include:

- **Intel® Server Board D50TNP**– Two options of server board only product that offer the server system developers the choice of integrating the server board within their own modules and server chassis. The server board can also be used as a spare Field Replaceable Unit (FRU).
- **Intel® D50TNP Modules** – Options of density optimized 1U and 2U modules (server building block option and spare FRU) integrated with either Intel® Server Board D50TNP1SB or D50TNP1SBCR (module dependent).
- **Intel® Server Systems D50TNP** – Options of 2U rack-mount server systems configured with Intel® D50TNP Modules and integrated with Intel® Server Chassis FC2000.



Server Board D50TNP1SB



Server Board D50TNP1SBCR

Figure 1. Intel® Server Board D50TNP

Intel® Server D50TNP Family Configuration Guide

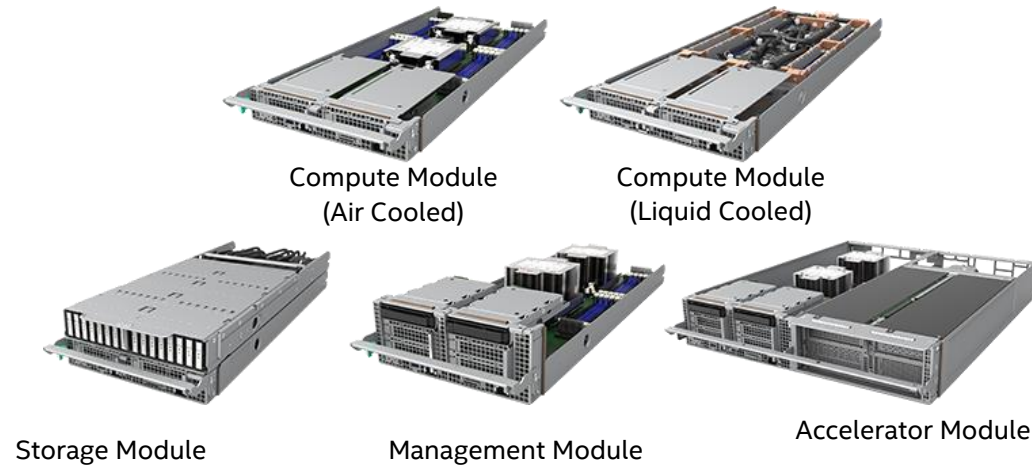


Figure 2. Intel® D50TNP Modules



Figure 3. Intel® Server Systems D50TNP

The following options are available for ordering the board, modules, and systems.

L3 = Server board product.

L6 = Modules Building Block Option with an integrated Intel® Server Board D50TNP1SB or D50TNP1SBCR. The base configuration is non-functional out of the box. Additional integration of Chassis and components required.

L9 = Fully integrated system. Pre-configured. Base configuration is power-on ready. No operating system installed.

Important Note: Fully configured (operation ready, no operating system) L9 systems are only orderable from Intel using its online Configure-To-Order (CTO) tool at orderconfigurator.intel.com (Intel NDA required) or contact your Intel field sales representative.

1.2 Processor Support

The supported 3rd Gen Intel® Xeon® Scalable processor family processor shelves are identified as shown in the following figure.

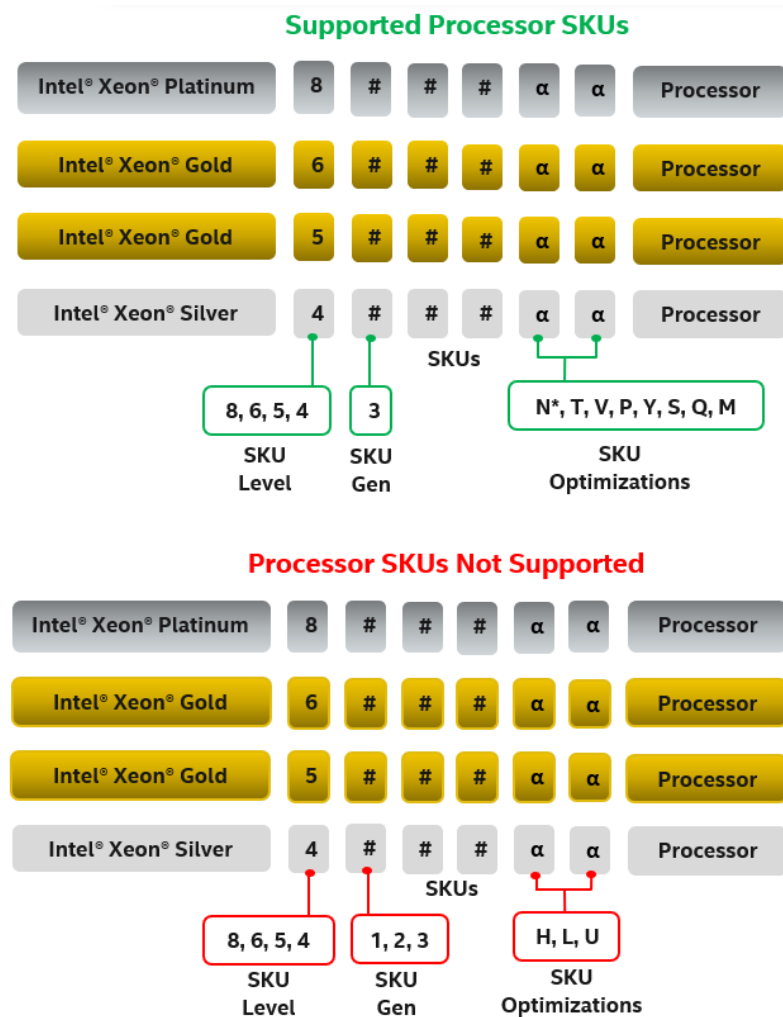


Figure 4. 3rd Gen Intel® Xeon® Scalable Processor Family Identification

Note: Supported 3rd Gen Intel® Xeon® Scalable processor SKUs must Not end in (H), (L), or (U). All other processor SKUs are supported.

*** Note:** The 8351N SKU is a 1-socket optimized SKU and is not supported on the Intel® Server D50TNP Family.

Table 1. 3rd Gen Intel® Xeon® Scalable Processor Family Feature Comparison

Feature	Platinum 8300 Processors	Gold 6300 Processors	Gold 5300 Processors	Silver 4300 Processor
# of Intel® Ultra Path Interconnect (Intel® UPI) Links	3	3	3	2
Intel® UPI Speed	11.2 GT/s	11.2 GT/s	11.2 GT/s	10.4 GT/s
Supported Topologies	2S-2UPI 2S-3UPI	2S-2UPI 2S-3UPI	2S-2UPI 2S-3UPI	2S-2UPI
Node Controller Support	No	No	No	No
Processor RAS Capability	Advanced	Advanced	Advanced	Standard
# of DDR4 Integrated Memory Controllers (IMC)	4	4	4	4
# DDR4 Channels	8	8	8	8
Intel® Turbo Boost Technology	Yes	Yes	Yes	Yes
Intel® HT Technology	Yes	Yes	Yes	Yes
Intel® AVX-512 ISA Support	Yes	Yes	Yes	Yes
Intel® AVX-512 - # of 512b FMA Units	2	2	2	2
# of PCIe* Lanes	64	64	64	64
Intel® VMD 2.0	Yes	Yes	Yes	Yes

Note: Feature may vary between processor SKUs.

Reference 3rd Gen Intel® Xeon® Scalable processor specification sheets and product briefs for additional information.

1.3 Memory Support

The Intel® Server D50TNP Family supports standard DDR4, RDIMM, and LDRIMM memory modules and Intel® Optane™ PMem (persistent memory) 200 series modules.

Note: Previous generation Intel® Optane™ PMem modules are not supported.

Note: Intel® Optane™ PMem 200 series modules are supported only in systems/modules with the Intel® Server Board D50TNP1SB.

The Intel® ServerD50TNP Family supports DDR4 DIMMs with the following features:

- Registered DDR4 (RDIMM), 3DS-RDIMM, Load Reduced DDR4 (LRDIMM), 3DS-LRDIMM
Note: 3DS = 3 Dimensional Stacking
- All DDR4 DIMMs must support ECC
- RDIMMs and LRDIMMs with thermal sensor on-DIMM (TSOD)
- DIMM speeds of up to 3200 MT/s (for Memory configurations with 2 DIMMs per channel)
- DIMM capacities of 8 GB, 16 GB, 32 GB, 64 GB, and 128 GB
- RDIMMs organized as Single Rank (SR), Dual Rank (DR)
- 3DS-RDIMM organized as Quad Rank (QR), or Oct Rank (OR)
- LRDIMMs organized as Quad Rank (QR)
- 3DS-LRDIMM organized as Quad Rank (QR), or Oct Rank (OR)

1.3.1 Memory Population

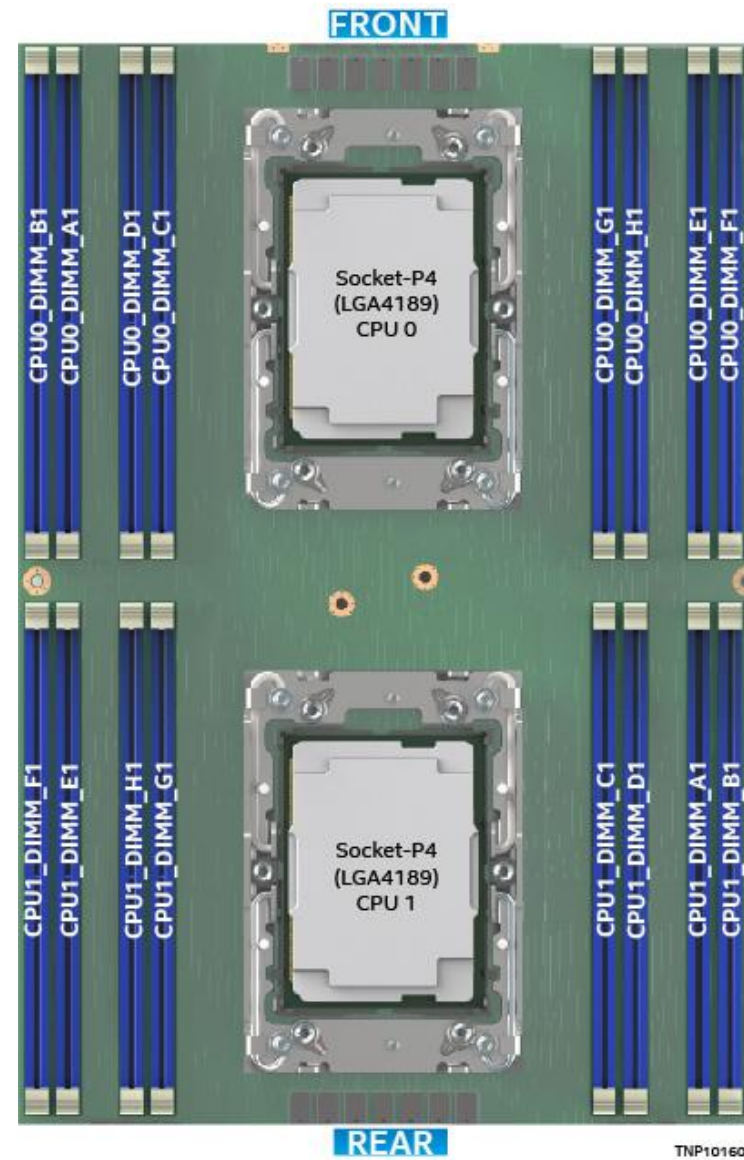
The Intel® Server Board D50TNP1SB supports memory configurations that consist of both standard DDR4 DIMMs and Intel® Optane™ PMem 200 series modules. With two processors installed, 8 memory slots are available for Intel® Optane™ PMem 200 series modules and 16 memory slots are available for DDR4 DIMMs. The Intel® Server Board D50TNP1SBCR supports up to 16 DDR4 DIMMs.

Figure 3 shows the full board layout for all memory slots on both processor sockets. Each 3rd Gen Intel® Xeon® Scalable processor supports eight memory channels using four integrated memory controllers (IMCs). Each memory channel is assigned an identifying letter A-H. On the Intel Server Board D50TNP1SB, channels A, C, E, and G each support two DIMM slots – slot 1 (blue slot for DDR4 DIMM) and slot 2 (black slot for Intel® Optane™ PMem). The remaining channels each support one DIMM slot (blue slot for DDR4 DIMM). On the Intel Server Board D50TNP1SBCR, all the channels each support one DIMM slot (blue slot for DDR4 DIMM).

Note: DDR4 DIMMs can only be installed in blue slots. Intel® Optane™ PMem modules can only be installed in black slots.



Intel® Server Board D50TNP1SB



Intel® Server Board D50TNP1SBCR

Figure 5. Memory Slot Layout

Intel DDR4 DIMM Support Disclaimer:

Intel validates and will only provide support for system configurations where all installed DDR4 DIMMs have matching “Identical” or “Like” attributes. See [Table 2](#). A system configured concurrently with DDR4 DIMMs from different vendors will be supported by Intel if all other DDR4 “Like” DIMM attributes match.

Intel does not perform system validation testing nor will it provide support for system configurations where all populated DDR4 DIMMs do not have matching “Like” DIMM attributes as listed in [Table 2](#).

Intel will only provide support for Intel server systems configured with DDR4 DIMMs that have been validated by Intel and are listed on Intel's Tested Memory list for the given Intel server product family.

Intel configures and ships pre-integrated L9 server systems. All DDR4 DIMMs within a given L9 server system as shipped by Intel will be identical. All installed DIMMs will have matching attributes as those listed in the “Identical” *DDR4 DIMM4 Attributes* column in [Table 2](#).

When purchasing more than one integrated L9 server system with the same configuration from Intel, Intel reserves the right to use “Like” DIMMs between server systems. At a minimum “Like” DIMMs will have matching DIMM attributes as listed in the table below. However, the DIMM model #, revision #, or vendor may be different.

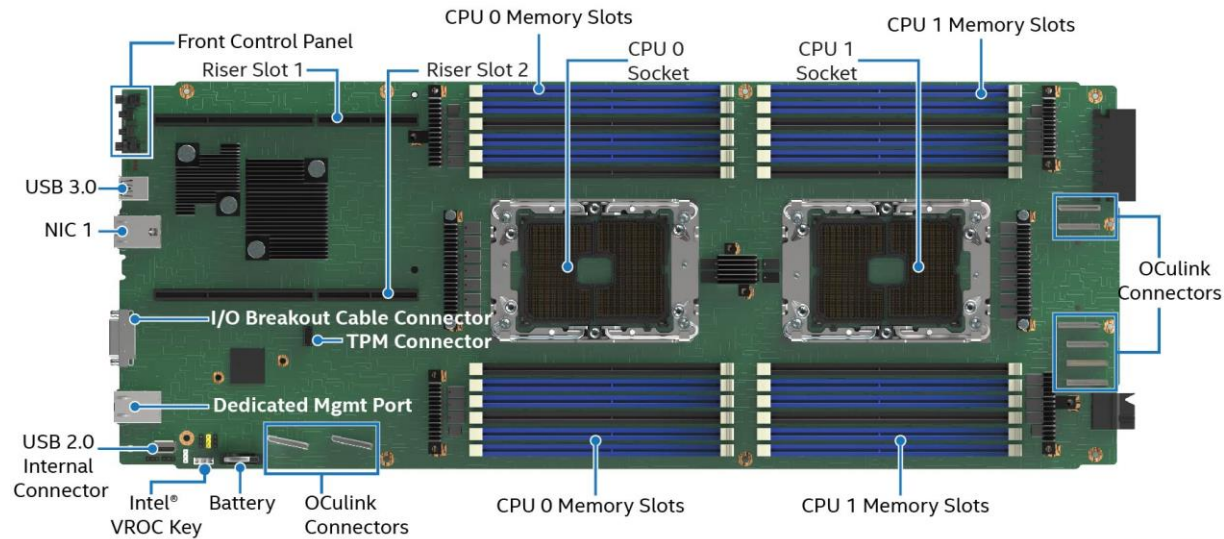
For warranty replacement, Intel will make every effort to ship back an exact match to the one returned. However, Intel may ship back a validated “Like” DIMM. A “Like” DIMM may be from the same vendor but may not be the same revision # or model #, or it may be an Intel validated DIMM from a different vendor. At a minimum, all “Like” DIMMs shipped from Intel will match attributes of the original part according to the definition of “Like” DIMMs in the following table.

Table 2. DDR4 DIMM Attributes Table for “Identical” and “Like” DIMMs

<ul style="list-style-type: none"> • DDR4 DIMMs are considered “Identical” when ALL listed attributes between the DIMMs match • Two or more DDR4 DIMMs are considered “Like” DIMMs when all attributes minus the Vendor, and/or DIMM Part # and/or DIMM Revision#, are the same. 			
Attribute	“Identical” DDR4 DIMM Attributes	“Like” DDR4 DIMM Attributes	Possible DDR4 Attribute Values
Vendor	Match	Maybe Different	Memory Vendor Name
DIMM Part #	Match	Maybe Different	Memory Vendor Part #
DIMM Revision #	Match	Maybe Different	Memory Vendor Part Revision #
SDRAM Type	Match	Match	DDR4
DIMM Type	Match	Match	RDIMM, LRDIMM
Speed (MHz)	Match	Match	2666, 2933, 3200
Voltage	Match	Match	1.2V
DIMM Size (GB)	Match	Match	8GB, 16GB, 32GB, 64GB, 128GB, 256GB
Organization	Match	Match	1Gx72; 2Gx72; 4Gx72; 8Gx72; 16Gx72; 32Gx72
DIMM Rank	Match	Match	1R, 2R, 4R, 8R
DRAM Width	Match	Match	x4, x8
DRAM Density	Match	Match	8Gb, 16Gb

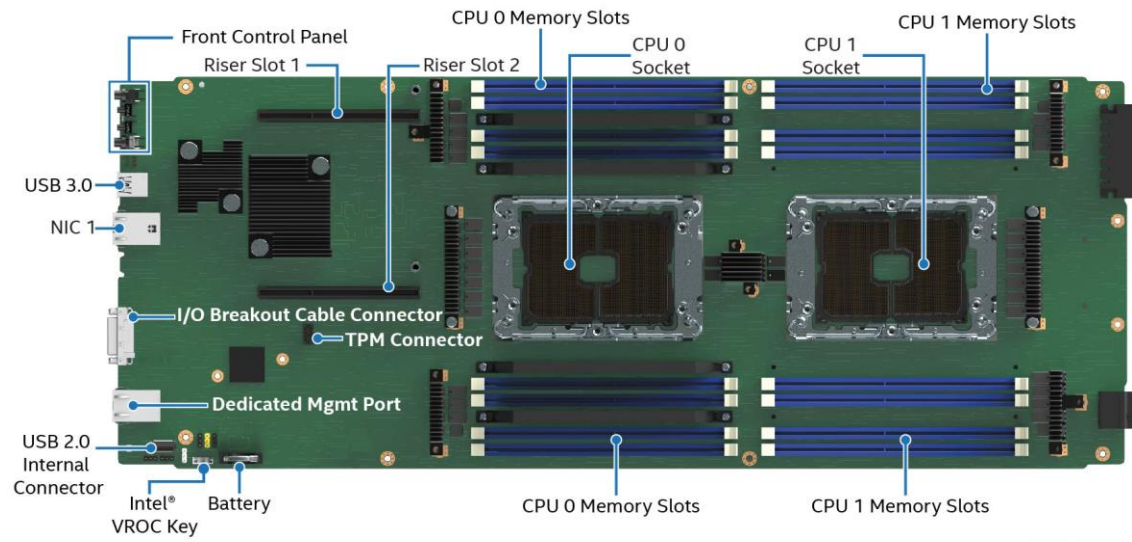
1.4 Intel® Server Board D50TNP Overview

The Intel® Server D50TNP Family offers two types of boards: D50TNP1SB and D50TNP1SBCR.



Ref #: TNPI0048

Figure 6. Intel® Server Board D50TNP1SB



Ref #: TNPI0152

Figure 7. Intel® Server Board D50TNP1SBCR

Table 3. Intel® Server Board D50TNP Features

Feature	D50TNP1SB	D50TNP1SBCR
Processor Support	<ul style="list-style-type: none"> • Dual Socket-P4 LGA4189 • Supported 3rd Gen Intel® Xeon® Scalable processor family SKUs: <ul style="list-style-type: none"> ○ Intel® Xeon® Platinum 8300 processor ○ Intel® Xeon® Gold 6300 processor ○ Intel® Xeon® Gold 5300 processor ○ Intel® Xeon® Silver 4300 processor • UPI links: three at 11.2 GT/s (Platinum and Gold SKUs) or two at 10.4 GT/s (Silver SKU) <p>Note: Supported 3rd Gen Intel® Xeon® Scalable processor SKUs must Not end in (H), (L), or (U). All other processor SKUs are supported.</p> <p>Note: Previous generation Intel® Xeon® processor and Intel® Xeon® processor Scalable families are not supported.</p>	
Maximum Processor Thermal Design Power (TDP)	<ul style="list-style-type: none"> • 3rd Gen Intel® Xeon® Scalable processors up to 270 W (server board only) <p>Note: See Table 4.</p> <p>Note: The maximum supported processor TDP at the system level may be lower than what the server board can support. Supported power, thermal, and configuration limits of the chosen server chassis need to be considered to determine if the system can support the maximum processor TDP limit of the server board. See the server chassis/system documentation for additional guidance.</p>	
Chipset	<ul style="list-style-type: none"> • Intel® C621A Platform Controller Hub (PCH) chipset • Embedded features enabled on this server board: <ul style="list-style-type: none"> ○ SATA III support ○ USB 3.0 support ○ PCIe 3.0 support 	
Memory Support	<ul style="list-style-type: none"> • Up to 16 DDR4 DIMMs + up to 8 Intel® Optane™ persistent memory 200 series modules. • All DDR4 DIMMs must support ECC • Registered DDR4 (RDIMM), 3DS-RDIMM, Load Reduced DDR4 (LRDIMM), 3DS-LRDIMM • Note: 3DS = 3-dimensional Stacking • Up to 3200 MT/s memory data transfer rates • Up to 2 TB DDR4 memory capacity for both processors (1 TB per processor), for all processor SKUs • Up to 6 TB DDR4 and Intel® Optane™ PMem combined memory capacity for both processors (3 TB per processor), for all processor SKUs supporting both DDR4 and Intel® Optane™ PMem • DDR4 standard voltage of 1.2 V <p>Note: The speed supported depends on the installed processor.</p>	<ul style="list-style-type: none"> • Up to 16 DDR4 DIMMs • All DDR4 DIMMs must support ECC • Registered DDR4 (RDIMM), 3DS-RDIMM, Load Reduced DDR4 (LRDIMM), 3DS-LRDIMM • Note: 3DS = 3-dimensional Stacking • Up to 3200 MT/s memory data transfer rates • Up to 2 TB DDR4 memory capacity for both processors (1 TB per processor), for all processor SKUs • DDR4 standard voltage of 1.2 V <p>Note: The speed supported depends on the installed processor.</p>

Feature	D50TNP1SB	D50TNP1SBCR
Front Panel Support		
I/O Ports	<ul style="list-style-type: none">One USB 3.0 portOne I/O breakout cable connector supporting the following:<ul style="list-style-type: none">Two USB 3.0 ports (dual-stack)One VGA connector (16 MB of DDR4 video memory)One serial port connector. The port follows Advanced Technology (AT) pinout specifications. <p>Note: The I/O breakout cable is available as an accessory option (iPC: AXXCONNTDBG).</p>	
Networking	<ul style="list-style-type: none">One external 10GBASE-T Ethernet port (RJ45)One external dedicated 1000BASE-T Ethernet management port (RJ45)	
LEDs	<ul style="list-style-type: none">Module statusModule ID	
Buttons	<ul style="list-style-type: none">PowerModule IDModule cold resetNon-maskable interrupt (NMI)	
Expansion Options		
Riser Slots	<p>Two riser slots on the server board:</p> <p><u>Riser Slot 1</u></p> <ul style="list-style-type: none">x16 1U single PCIe* slot riser card option supporting PCIe* 4.0 lanes routed from CPU 0x32 2U dual PCIe* slot riser card option supporting PCIe* 4.0 lanes routed from CPU 0 and CPU 1x4 SATA/PCIe* NVMe* M.2 SSD option supporting PCIe* 3.0 lanes routed from chipset <p>Note: PCIe* lanes routed from processor/chipset have Intel® VROC 7.5 (VMD NVMe* RAID) support using Intel VROC key (accessory option)</p> <p><u>Riser Slot 2</u></p> <ul style="list-style-type: none">x16 1U single PCIe* slot riser card option supporting PCIe* 4.0 lanes routed from CPU 1x24 2U dual PCIe* slot riser card option supporting PCIe* 4.0 lanes routed from CPU 0 and CPU 1x4 SATA/PCIe* NVMe* M.2 SSD option supporting PCIe* 3.0 lanes routed from chipset <p>Note: PCIe* lanes routed from processor/chipset have Intel® VROC 7.5 (VMD NVMe* RAID) support using Intel VROC key (accessory option)</p>	<p>Two riser slots on the server board:</p> <p><u>Riser Slot 1</u></p> <ul style="list-style-type: none">x16 1U single PCIe* slot riser card option supporting PCIe* 4.0 lanes routed from CPU 0x4 SATA/PCIe* NVMe* M.2 SSD option supporting PCIe* 3.0 lanes routed from chipset <p>Note: PCIe* lanes routed from processor/chipset have Intel® VROC 7.5 (VMD NVMe* RAID) support using Intel VROC key (accessory option)</p> <p><u>Riser Slot 2</u></p> <ul style="list-style-type: none">x16 1U single PCIe* slot riser card option supporting PCIe* 4.0 lanes routed from CPU 1x4 SATA/PCIe* NVMe* M.2 SSD option supporting PCIe* 3.0 lanes routed from chipset <p>Note: PCIe* lanes routed from processor/chipset have Intel® VROC 7.5 (VMD NVMe* RAID) support using Intel VROC key (accessory option)</p>

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Feature	D50TNP1SB	D50TNP1SBCR
Supported Onboard Connectors and Headers		
PCIe* NVMe* Interface Support	<ul style="list-style-type: none">Four OCuLink connectors with x8 PCIe* 4.0 lanes routed from CPU 0Four OCuLink connectors with x8 PCIe* 4.0 lanes routed from CPU 1 Note: PCIe* lanes routed from processor/chipset have Intel® VROC (VMD NVMe* RAID) support using Intel VROC key (accessory option)	OCuLink connectors not available
USB Support	<ul style="list-style-type: none">One USB 2.0 onboard type-A connector for internal use Important Note: Not all Intel Server Boards D50TNP1SB and D50TNP1SBCR ship with the USB 2.0 onboard type-A connector installed. Intel does not support requests to have this connector installed on Intel Server Boards D50TNP1SB and D50TNP1SBCR that are shipped without the connector.	
Security Support	<ul style="list-style-type: none">Intel® Platform Firmware Resilience (Intel® PFR) technologyIntel® Total Memory Encryption (Intel® TME)Intel® Software Guard Extensions (Intel® SGX)Intel® CbT – Converged Intel® Boot Guard and Trusted Execution Technology (Intel® TXT)Trusted platform module 2.0 (Rest of World) – iPC AXXTPMENC8 (accessory option)Trusted platform module 2.0 (China Version) – iPC AXXTPMCHNE8 (accessory option)	
Serviceability		
Server Management	<ul style="list-style-type: none">Integrated Baseboard Management Controller (BMC)Intelligent Platform Management Interface (IPMI) 2.0 compliantRedfish* compliantSupport for Intel® Data Center Manager (Intel® DCM)Support for Intel® Server Debug and Provisioning Tool (Intel® SDP Tool)One external dedicated 1000BASE-T Ethernet management port (RJ45)Intel® Light-Guided Diagnostics included onboard LEDs	
Server Management Processor (SMP)	<ul style="list-style-type: none">ASpeed* AST2500 Advanced PCIe Graphics and Remote Management ProcessorEmbedded features enabled on this server board:<ul style="list-style-type: none">Baseboard Management Controller (BMC)2D Video Graphics Adapter	
Onboard Configuration and Service Jumpers	<ul style="list-style-type: none">BIOS load defaultsBIOS Password clearIntel® Management Engine (Intel® ME) firmware force updateBMC force updateBIOS Security Version Number (SVN) DowngradeBMC SVN Downgrade	
BIOS	<ul style="list-style-type: none">Unified Extensible Firmware Interface (UEFI)-based BIOS (legacy boot not supported)	
Module Support	<ul style="list-style-type: none">D50TNP1MHCPACD50TNP2MHSVACD50TNP2MHSTACD50TNP2MFALAC See Table 4 for more information on Intel® D50TNP Modules.	<ul style="list-style-type: none">D50TNP1MHCRACD50TNP1MHEVACD50TNP1MHCRLC See Table 4 for more information on Intel® D50TNP Modules.

1.5 Intel® D50TNP Modules Overview

The Intel® Server D50TNP Family offers a variety of modules, where each module within a system configuration is independently operated from the others. The installed modules within a system chassis share resources like power and cooling. [Table 5](#) describes the different ways an Intel® Server System D50TNP can be configured.

Table 4. Intel® D50TNP Modules

Module Type	iPC	Height	Width	Cooling	Maximum Processor Thermal Design Power (TDP) ¹	Modules per Chassis
Compute	D50TNP1MHCPAC	1U	Half width	Air cooled	205 W	Up to four
	D50TNP1MHCRCAC				205 W	
	D50TNP1MHEVAC				270 W	
	D50TNP1MHCRLC			Liquid cooled	270 W	Up to four
Management	D50TNP2MHSVAC	2U	Half width	Air cooled	270 W	Up to two
Storage	D50TNP2MHSTAC	2U	Half width	Air cooled	205 W	Up to two
Accelerator	D50TNP2MFALAC	2U	Full width	Air cooled	270 W	One

Note 1: See the *Intel® Server D50TNP Family Technical Product Specification* for detailed information on TDP.

Mixing different types of modules in the same chassis can be done as follows:

- Up to two 1U air-cooled Compute Modules with one 2U Management Module
- Up to two 1U air-cooled Compute Modules with one 2U Storage Module
- One 2U Management Module with one 2U Storage Module

Note: Mixing liquid-cooled modules with air-cooled modules in a single system is not supported.

Note: Mixing 1U air-cooled Compute Module with regular processor heat sinks and 1U Compute Module with EVAC processor heat sinks in a single system is not supported.

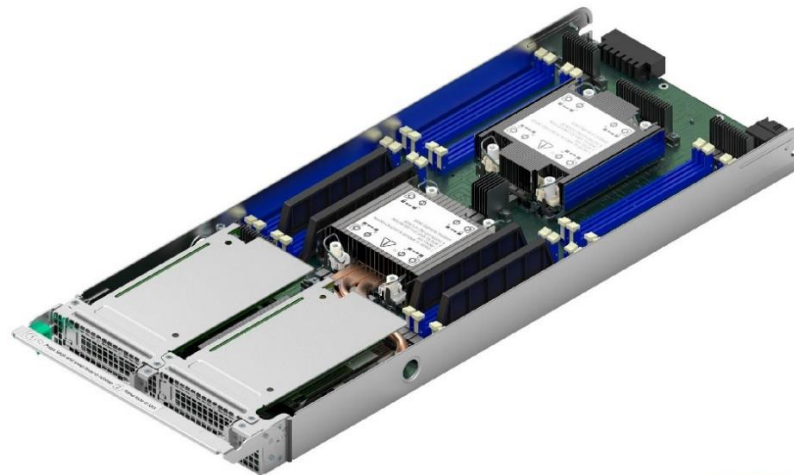


TNP30760



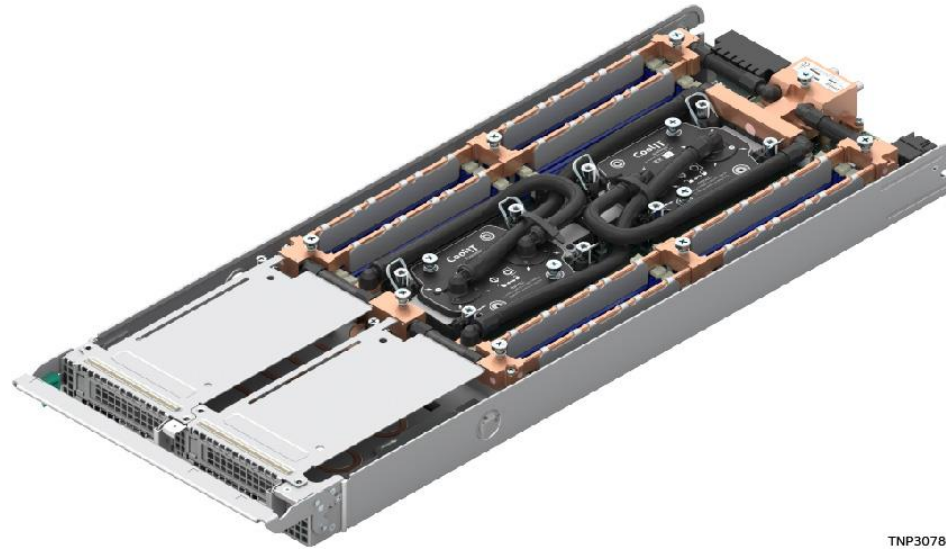
TNP30770

Figure 8. Air-cooled Compute Modules D50TNP1MHCPAC and D50TNP1MHCRCAC



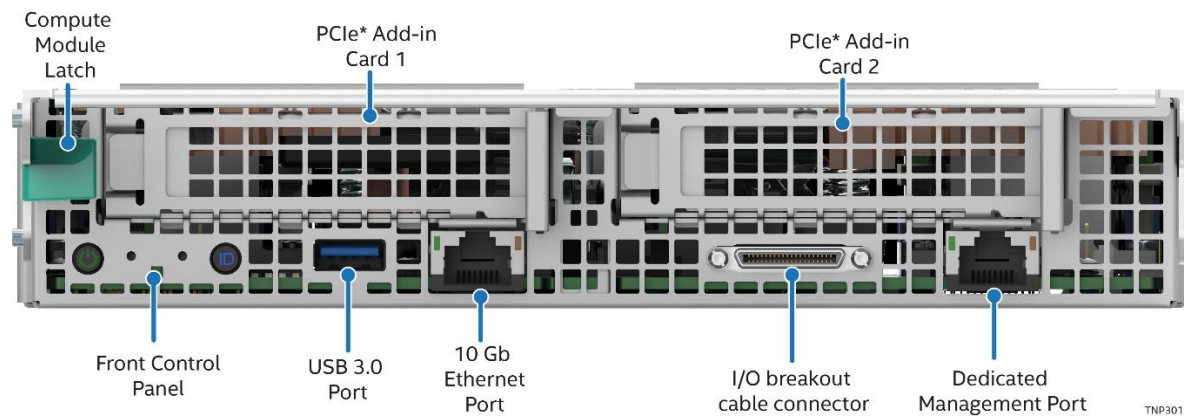
Ref #: TNP30880

Figure 9. Air-cooled Compute Module with EVAC heat sink D50TNP1MHEVAC



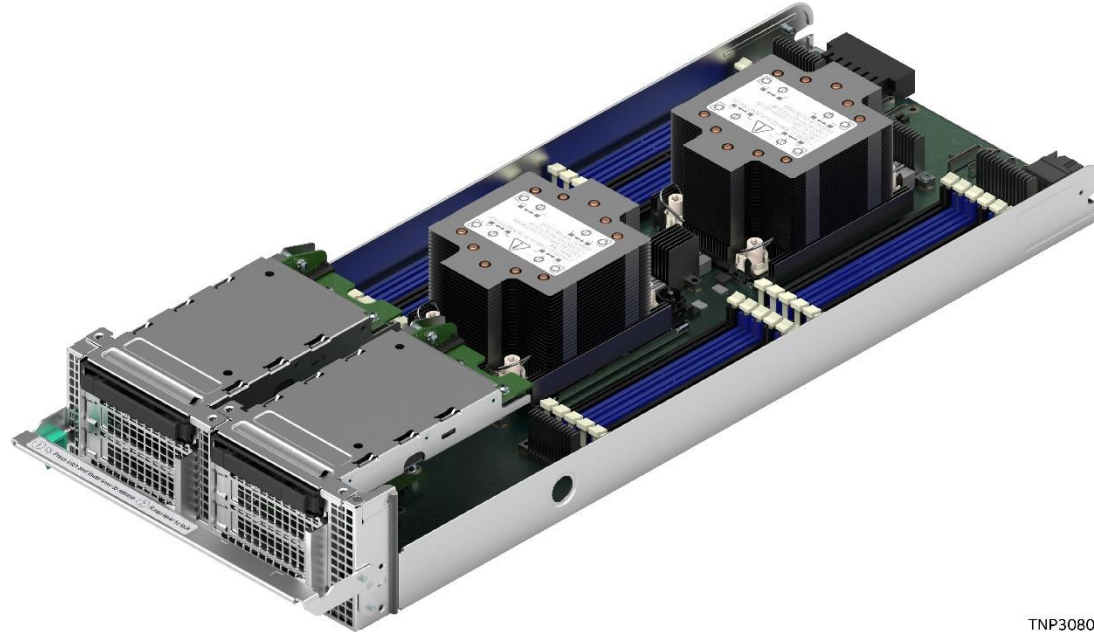
TNP30780

Figure 10. Liquid-cooled Compute Module D50TNP1MHCRLC



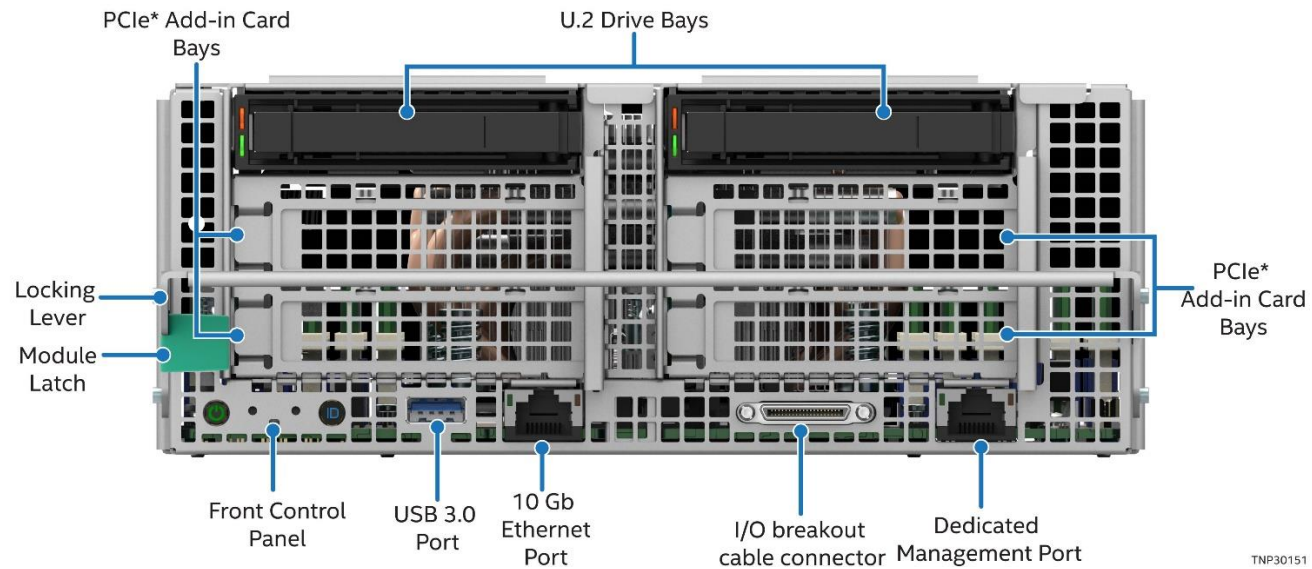
TNP30140

Figure 11. 1U Compute Module Front Panel Features



TNP30800

Figure 12. Air-cooled Management Module



TNP30151

Figure 13. 2U Management Module Front Panel Features

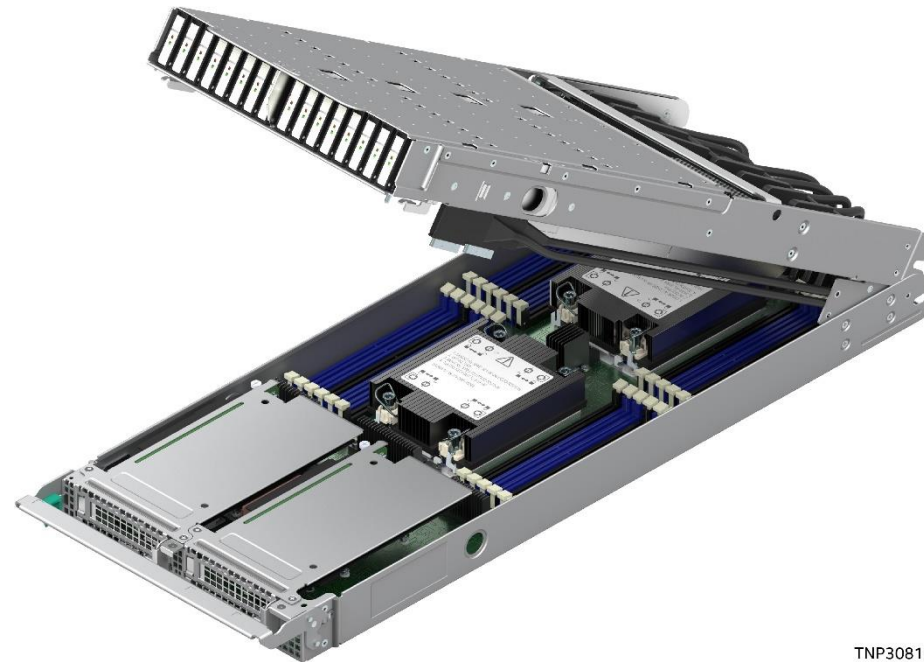


Figure 14. Air-cooled Storage Module

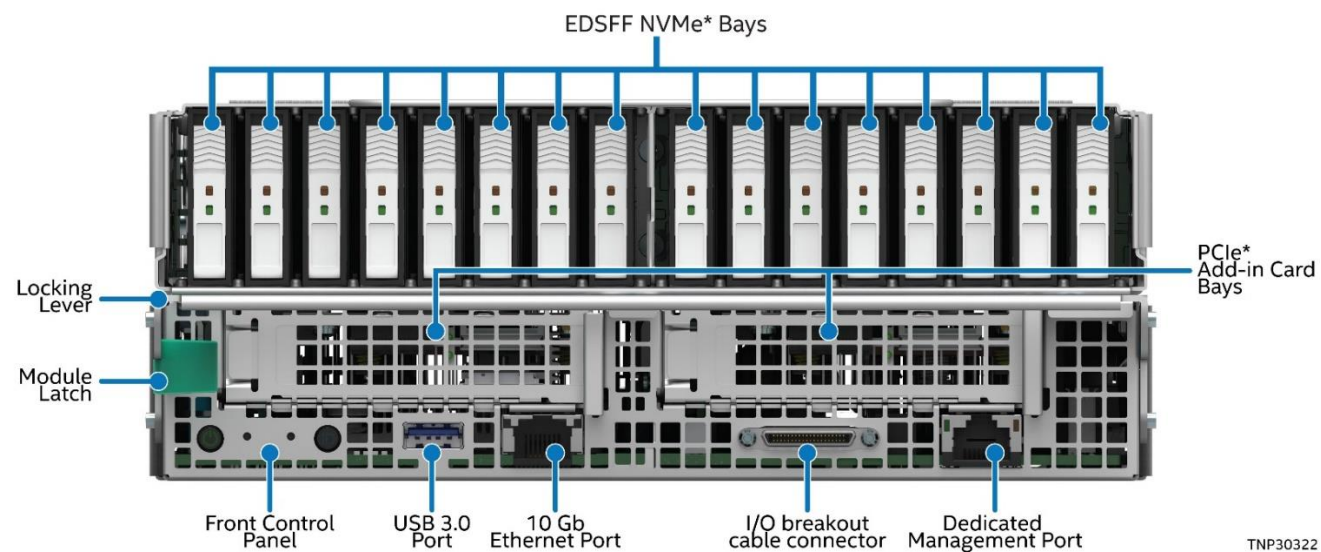
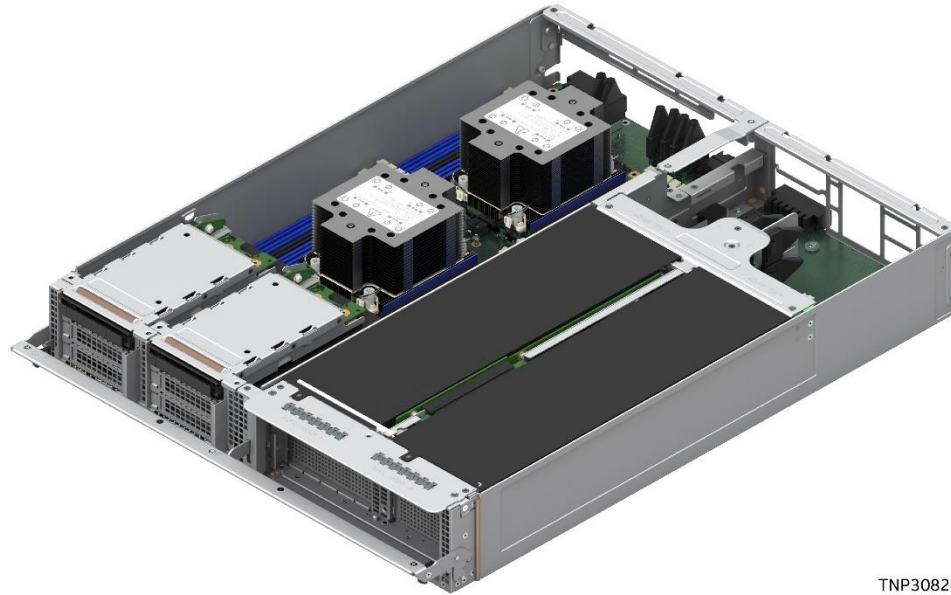
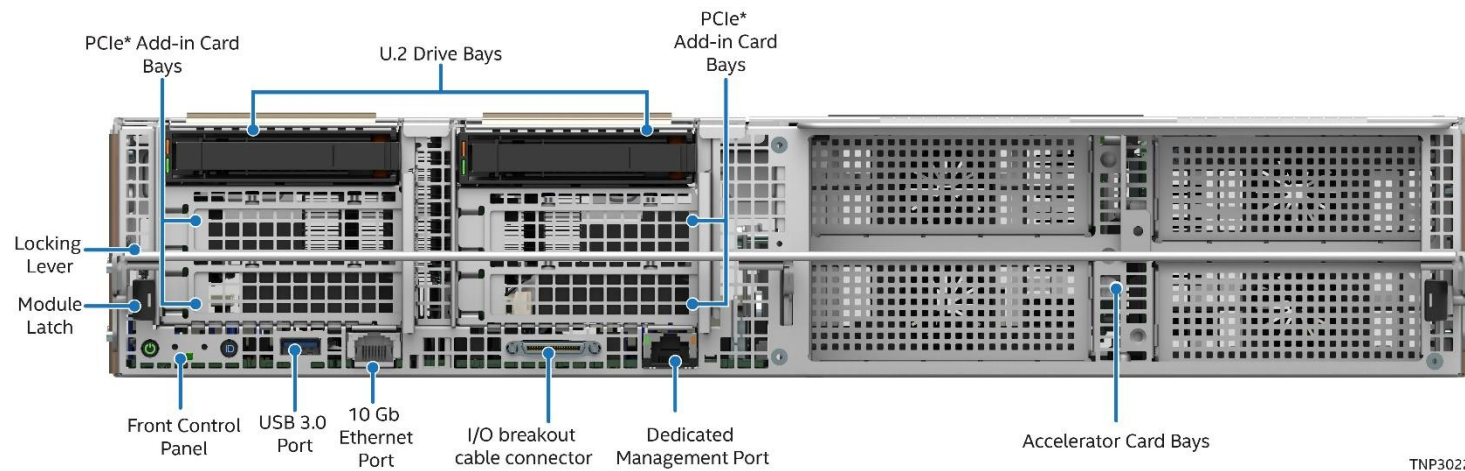


Figure 15. 2U Storage Module Front Panel Features



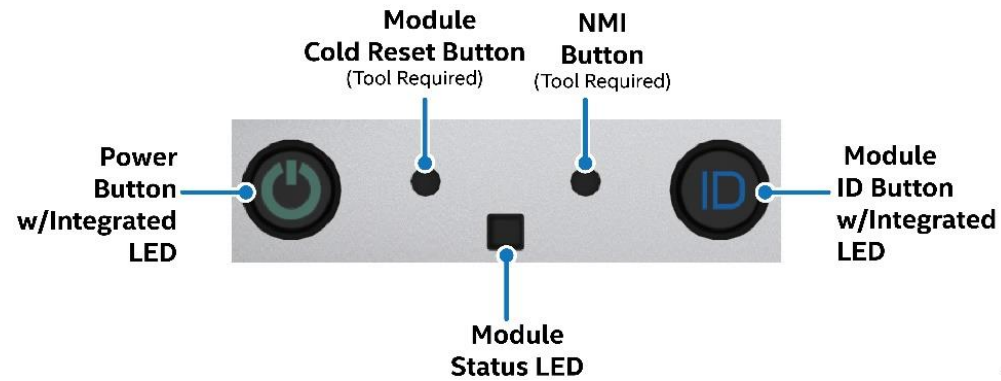
TNP30820

Figure 16. Air-Cooled Accelerator Module



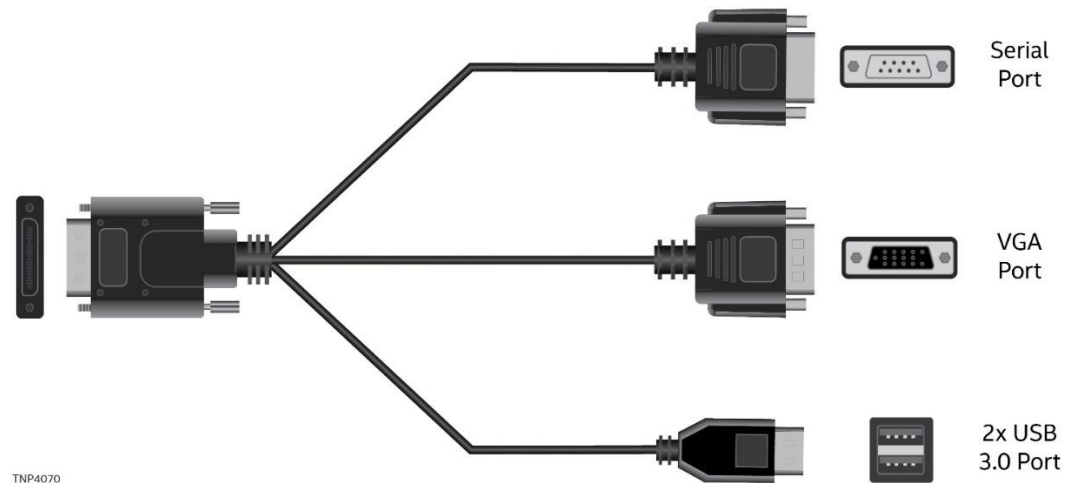
TNP30222

Figure 17. 2U Accelerator Module Front Panel Features



TNP2041

Figure 18. Front Control Panel Features for All Modules



TNP4070

Figure 19. I/O Breakout Cable Connector Identification

1.6 Intel® Server System D50TNP / Chassis Overview

As a building block, the Intel® Server D50TNP Family includes four Intel® Server Chassis FC2000 products. These four chassis-only products are listed below. See [Table 5](#) for a feature list of system and chassis-only features.

- 2U Half-width configuration, liquid cooled, 2100 W PSU chassis: – **IPC FC2HLC21W3**
 - Supports up to four 1U half-width modules (liquid cooled) – **See Important Note below**
- 2U Half-width configuration, air cooled, 2100 W PSU chassis – **IPC FC2HAC21W3**
 - Supports up to four 1U half-width modules (air cooled)
 - Supports up to two 2U half-width modules (air cooled)
 - Supports one 2U half-width module and two 1U half-width modules (air cooled)
- 2U Half-width configuration, air cooled, 1600 W PSU chassis – **IPC FC2HAC16W3**
 - Supports up to two 2U half-width modules (air cooled)
- 2U Full-width configuration, air cooled, 1600 W PSU chassis – **IPC FC2FAC16W3**
 - Supports one 2U full-width module (air cooled)

Important Note: Intel® Server System D50TNP 1U half-width liquid-cooled Compute Modules come with the DIMM retention clips included. If the chassis with liquid cooled configuration, FC2HLC21W3, is shipped with fewer than four Compute Modules, the DIMM retention clips could come loose during shipping. Multiple options to avoid the situation are:

- Ship the Intel® Server System D50TNP with all four liquid-cooled Compute Modules installed.
 - Ship the liquid-cooled Compute Modules separately packaged.
 - Fill the empty slots in the chassis with packaging materials when shipping with less than four liquid-cooled Compute Modules installed.
-

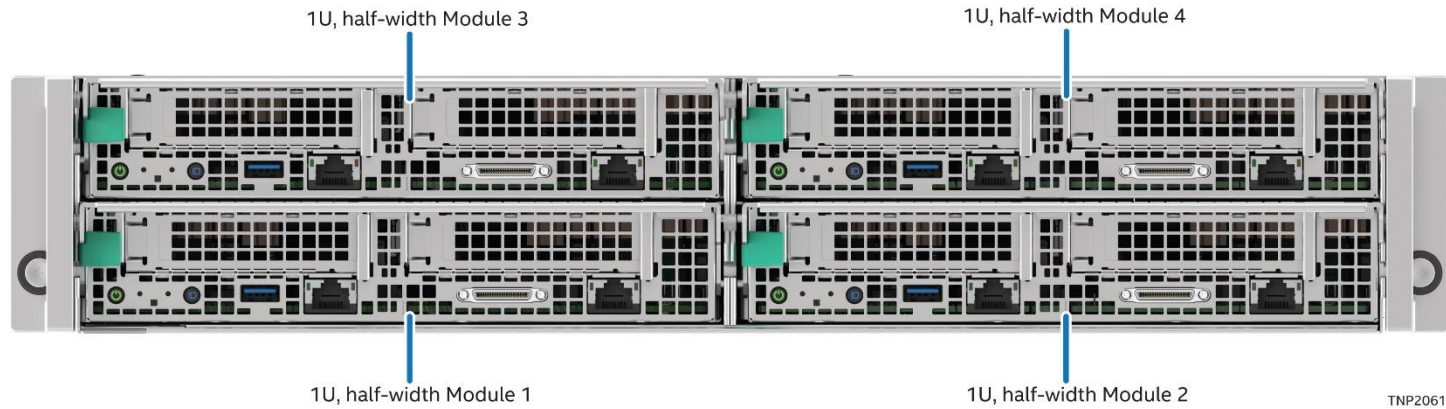
Table 5. Intel® Server Chassis D50TNP Feature Set

Feature	Description			
	Chassis SKU iPC FC2HLC21W3	Chassis SKU iPC FC2HAC21W3	Chassis SKU iPC FC2HAC16W3	Chassis SKU iPC FC2FAC16W3
Chassis Definition	FC2000 half-width configuration, Liquid Cooled (2100 W)	FC2000 half-width configuration, Air Cooled (2100 W)	FC2000 half-width configuration, Air Cooled (1600 W)	FC2000 full-width configuration, Air Cooled (1600 W)
Chassis Type	2U, rack-mount, multi-module			2U, rack-mount, single module
Chassis Dimensions	<ul style="list-style-type: none"> • 865 x 441.8 x 86.8 mm 			
Packaging Dimensions	<ul style="list-style-type: none"> • 1192 x 758 x 317 mm (L x W x H) 			

Intel® Server D50TNP Family Configuration Guide

Feature	Description			
	Chassis SKU iPC FC2HLC21W3	Chassis SKU iPC FC2HAC21W3	Chassis SKU iPC FC2HAC16W3	Chassis SKU iPC FC2FAC16W3
Supported Intel® D50TNP Modules	<ul style="list-style-type: none">Up to four 1U half-width modules (liquid cooled)	<ul style="list-style-type: none">Up to four 1U half-width modules (air cooled)One 2U half-width module and two 1U half-width modules (air cooled)Up to two 2U half-width modules (air cooled)	<ul style="list-style-type: none">Up to two 2U half-width modules (air cooled)	<ul style="list-style-type: none">One 2U full-width Accelerator Module
Cooling	Liquid-cooled configurations: <ul style="list-style-type: none">Three 60 x 60 x 56 mm dual-rotor hot-swap system fans with support for fan redundancyLiquid-cooling loop (per module)Liquid-cooling plumbing connections on the back of the chassisOne fan per installed PSU	Air-cooled configurations: <ul style="list-style-type: none">Five dual-rotor hot-swap system fans with support for fan redundancy<ul style="list-style-type: none">Three 60 x 60 x 56 mm fansTwo 80 x 80 x 80 mm fansOne fan per installed power supply unit (PSU)		
Power	Three 2100 W AC power supplies with power redundancy support (dependent on system configuration).		Three 1600 W AC power supplies with power redundancy support (dependent on system configuration).	
Rack Mount Kit (FCXXRAILKIT)	<ul style="list-style-type: none">Tool-less installationFixed position Note: Rack mount kit is included with chassis.			
Serviceability	Modular chassis features for simplified serviceability: <ul style="list-style-type: none">Fully independent Intel® D50TNP ModulesHot-swap power suppliesHot-swap system fansHot-swap U.2 solid state drive (SSD) storage (dependent on Intel® D50TNP Module)Hot-swap full-length PCIe* NVMe* EDSFF SSDs (dependent on Intel® D50TNP Module)			
Operating Temperature	10–35 °C ambient temperature			
Server Management	Optional Ethernet Management Port (EMP) to remotely manage the Intel® D50TNP Modules			

All systems in the Intel® Server D50TNP Family feature front loading modules. The following illustrations provide system views for all supported system configurations.



**Figure 20. Module Identification for Four-Module System Configuration –
Chassis IPCs: FC2HLC21W3 and FC2HAC21W3**



**Figure 21. Module Identification for Two-Module System Configuration –
Chassis IPCs: FC2HLC21W3, FC2HAC21W3, FC2HAC16W3**

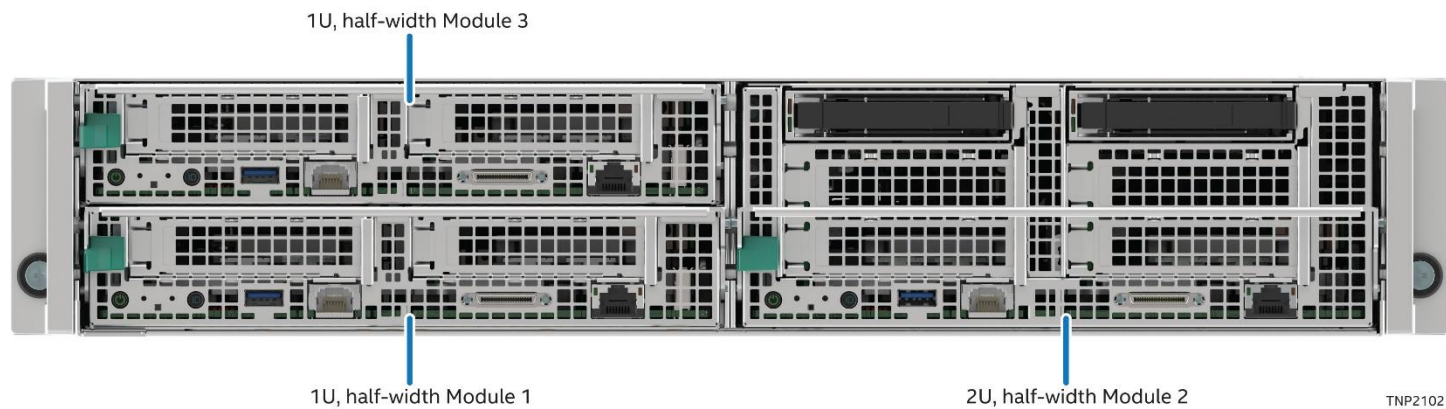


Figure 22. Module Identification for Three-Module System Configuration – Chassis IPCs: FC2HLC21W3 and FC2HAC21W3

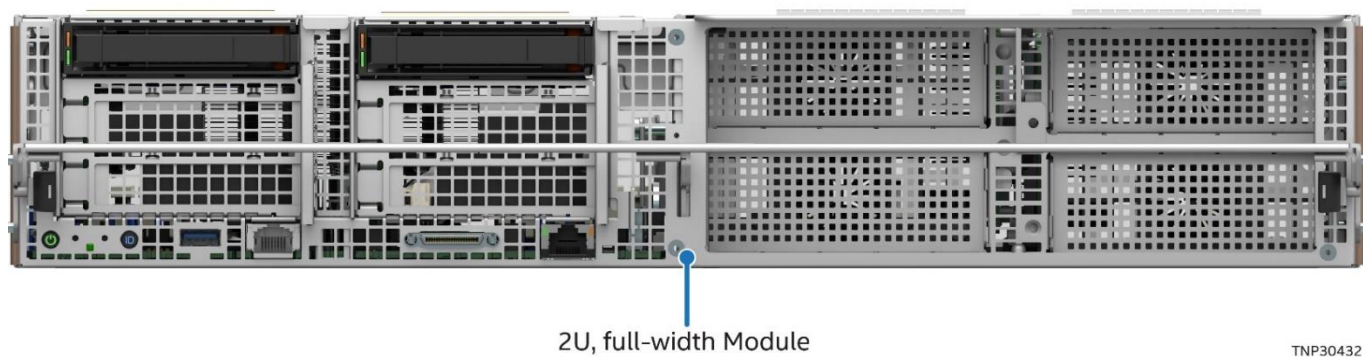


Figure 23. Module Identification for One-Module System Configuration – Chassis iPC: FC2FAC16W3

Intel® Server D50TNP Family Configuration Guide

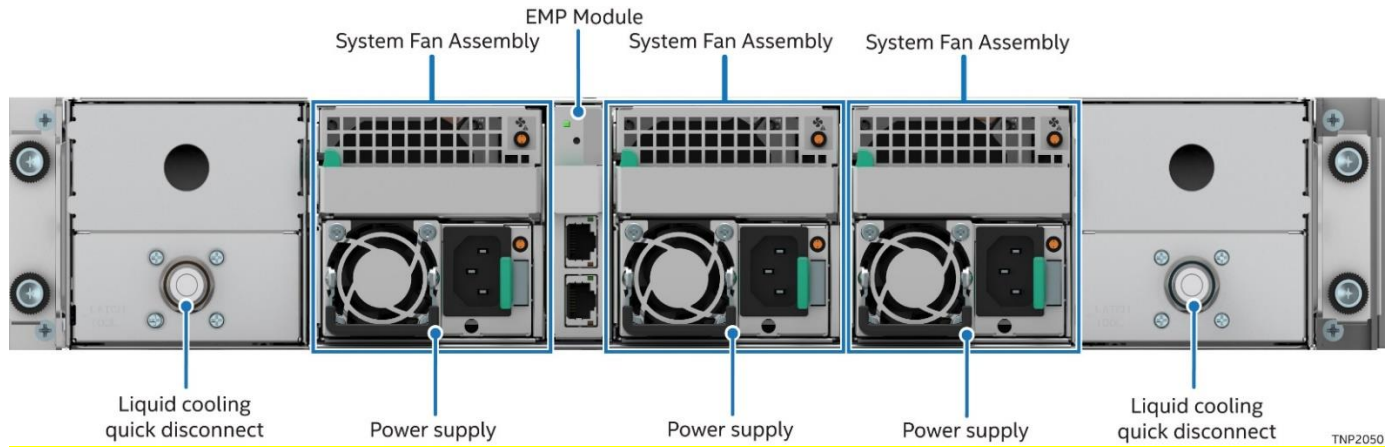


Figure 24 Liquid-Cooled System Back View

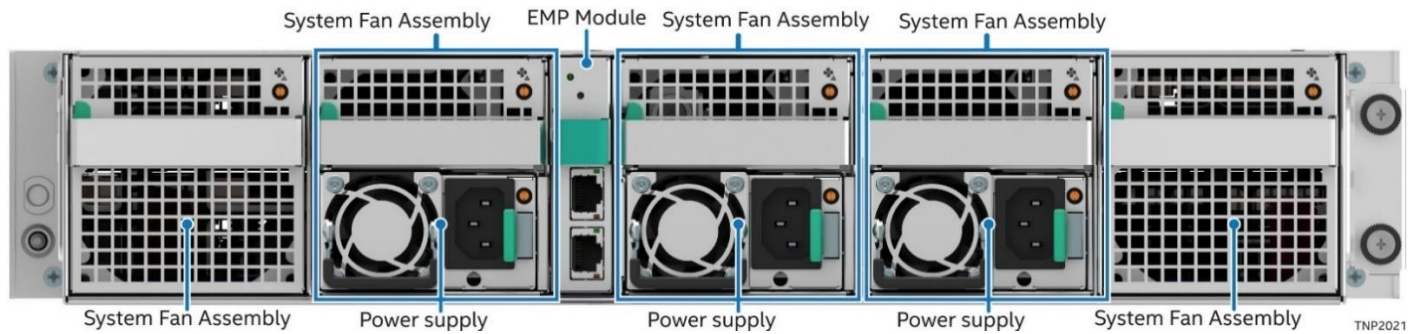


Figure 25. Air Cooled System Back View

1.7 Reference Documents and Support Collaterals

For additional information, see the product support collaterals specified in the following table. The following webpage provides support information for the Intel® Server D50TNP Family: <https://www.intel.com/content/www/us/en/support/products/201583.html>

Table 6. Intel® Server D50TNP Family Reference Documents and Support Collaterals

Topic	Document Title or Support Collateral	Document Classification
Technical information about this product family	<i>Intel® Server D50TNP Family Technical Product Specification</i>	Public
System integration instructions and service guidance	<i>Intel® Server D50TNP Family Integration and Service Guide</i>	Public
Server configuration guidance and compatibility	<i>Intel® Server D50TNP Family Configuration Guide</i>	Public
Information on the Integrated BMC Web Console	<i>Integrated Baseboard Management Controller Web Console (Integrated BMC Web Console) User Guide</i>	Public
BIOS technical information on Intel® Server D50TNP Family	<i>BIOS Firmware External Product Specification (EPS)</i>	Intel Confidential
BIOS setup information on Intel® Server D50TNP Family	<i>BIOS Setup Utility User Guide</i>	Public
BMC technical information on Intel® Server D50TNP Family	<i>Integrated Baseboard Management Controller Firmware External Product Specification (EPS)</i>	Intel Confidential
Base specifications for the IPMI architecture and interfaces	<i>Intelligent Platform Management Interface Specification Second Generation v2.0</i>	Intel Confidential
Specifications for the PCIe* 3.0 architecture and interfaces	<i>PCIe Base Specification, Revision 3.0</i> http://www.pcisig.com/specifications	Public
Specifications for the PCIe* 4.0 architecture and interfaces	<i>PCIe Base Specification, Revision 4.0</i> http://www.pcisig.com/specifications	Public
TPM for PC Client specifications	<i>TCG PC Client Platform TPM Profile Specifications revision 2.0</i>	Public
Functional specifications of 3 rd Gen Intel® Xeon® Scalable processor family	<i>3rd Generation Intel® Xeon® Scalable Processors, Codename Ice Lake-SP External Design Specification (EDS): Document IDs: 574451, 574942, 575291</i>	Intel Confidential
Processor thermal design specifications and recommendations	<i>3rd Generation Intel® Xeon® Scalable Processor, Codename Ice Lake-SP and Cooper Lake-SP - Thermal and Mechanical Specifications and Design Guide (TMSDG): Document ID 574080</i>	Intel Confidential
BIOS and BMC Security Best Practices	<i>Intel® Server Systems Baseboard Management Controller (BMC) and BIOS Security Best Practices White Paper</i> https://www.intel.com/content/www/us/en/support/articles/000055785/server-products.html	Public
Managing an Intel Server Overview	<i>Managing an Intel Server System 2020</i> https://www.intel.com/content/www/us/en/support/articles/000057741/server-products.html	Public

Intel® Server D50TNP Family Configuration Guide

Topic	Document Title or Support Collateral	Document Classification
Technical information on Intel® Optane™ persistent memory 200	<i>Intel® Optane™ Persistent Memory 200 Series Operations Guide</i>	Intel Confidential
Setup information for Intel® Optane™ persistent memory 200	<i>Intel® Optane™ Persistent Memory Startup Guide</i>	Public
Latest system software updates: BIOS and Firmware	<i>Intel® System Update Package (SUP) for Intel® Server D50TNP Family</i>	Public
	<i>Intel® Server Firmware Update Utility - Various operating system support</i>	
	<i>Intel® Server Firmware Update Utility User Guide</i>	
To obtain full system information	<i>Intel® Server Information Retrieval Utility - Various operating system support</i>	Public
	<i>Intel® Server Information Retrieval Utility User Guide</i>	
To configure, save, and restore various system options	<i>Intel® Server Configuration Utility - Various operating system support</i>	Public
	<i>Intel® Server Configuration Utility User Guide</i>	
Product Warranty Information	<i>Warranty Terms and Conditions</i> https://www.intel.com/content/www/us/en/support/services/000005886.html	Public
Safety and Regulatory Compliance Information	<i>Intel® Server D50TNP Family Technical Product Specification</i>	Public
Intel® Data Center Manager (Intel® DCM) information	<i>Intel® Data Center Manager (Intel® DCM) Product Brief</i> https://software.intel.com/content/www/us/en/develop/download/dcm-product-brief.html	Public
	<i>Intel® Data Center Manager (Intel® DCM) Console User Guide</i> https://software.intel.com/content/www/us/en/develop/download/dcm-user-guide.html	Public

Note: Intel Confidential documents are made available under a Non-Disclosure Agreement (NDA) with Intel and must be ordered through your local Intel representative.

2. Server Building Block Options

Server building blocks are offered to provide the option of choosing from available Intel® Server D50TNP Family components to create a custom system configuration from the chassis up. Each building block component and optional accessory is purchased separately and assembled by a system integrator. At a minimum, a base functional server system using building blocks requires the following:

- Liquid or air cooled 2U Intel® Server Chassis from the FC2000 chassis family
- Up to four 1U or up to two 2U modules from the Intel® D50TNP Module options (see [Table 5](#) for details)
- Two processors per module
- Memory
- Storage devices
- Liquid cooling kit (required for liquid-cooled Intel® D50TNP modules only)

Note: Mixing compute modules in one chassis is supported only if the modules are the same cooling type.

Optional Intel accessories include the following:

- NVMe* Intel® Virtual RAID on Chip (Intel® VROC) activation key
- Liquid cooling front Voltage Regulator thermal interface material compound and application tools (required for liquid-cooled Intel® D50TNP Modules only)
- I/O breakout cable with support for serial port, video port, and USB 2.0 ports
- Accelerator add-in card specific kit with metal bracket and power cable (required for Accelerator Module D50TNP2MFALAC only)

See [Chapter 3](#) for available accessory options.

2.1 Intel® Server Board D50TNP Options

The product tables in this section provide order code information and detailed descriptions for each available board option. The parts listed as included are ship along components in the product BOM.

For optional accessories, see [Chapter 3](#).

Note: Items identified with an iPC (Intel Product Code) are orderable building block options, accessories, or spare FRUs. In an effort to provide the complete product bill of materials, the ship along components list in each product table include items identified by description and by iPN (Intel Part Number). The iPN information is provided for reference only. These components are not orderable as spares or accessories.

Table 7. Intel® Server Board D50TNP1SB Specifications

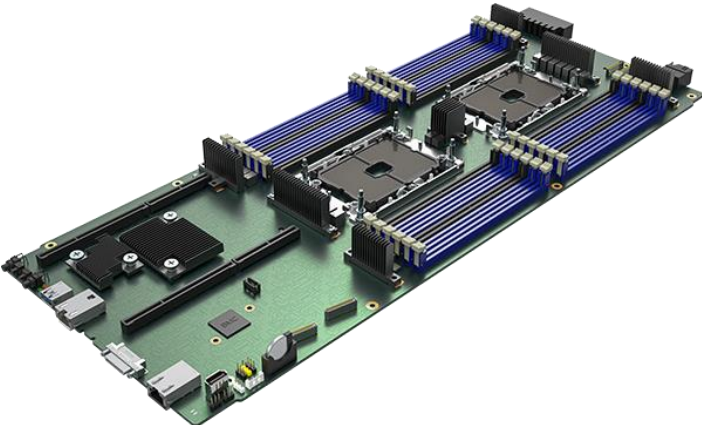
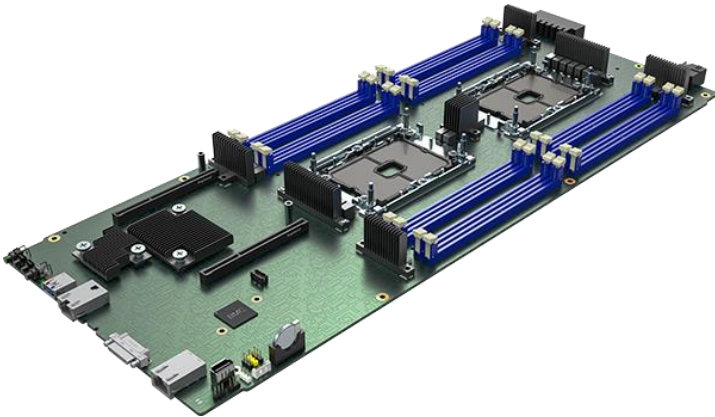
Intel® Server Board D50TNP1SB																						
Intel® Server Board D50TNP																						
	<table><tr><td>iPC</td><td>D50TNP1SB</td></tr><tr><td>MM#</td><td>99A2AT</td></tr><tr><td>UPC</td><td>00735858469319</td></tr><tr><td>EAN</td><td>5032037207881</td></tr><tr><td>MOQ</td><td>1</td></tr></table>	iPC	D50TNP1SB	MM#	99A2AT	UPC	00735858469319	EAN	5032037207881	MOQ	1	<table><tr><td>Product type</td><td>Server board only product or spare FRU</td></tr><tr><td>Form factor</td><td>Half-Width</td></tr><tr><td>Packaged gross wt.</td><td>6.72 lbs. (3.05 kg)</td></tr><tr><td>Un-packaged net wt.</td><td>3.73 lbs. (1.69 kg)</td></tr><tr><td>Dimensions</td><td>543.56 x 211.58 x 2.23 mm (L x W x H)</td></tr></table>	Product type	Server board only product or spare FRU	Form factor	Half-Width	Packaged gross wt.	6.72 lbs. (3.05 kg)	Un-packaged net wt.	3.73 lbs. (1.69 kg)	Dimensions	543.56 x 211.58 x 2.23 mm (L x W x H)
	iPC	D50TNP1SB																				
	MM#	99A2AT																				
	UPC	00735858469319																				
	EAN	5032037207881																				
MOQ	1																					
Product type	Server board only product or spare FRU																					
Form factor	Half-Width																					
Packaged gross wt.	6.72 lbs. (3.05 kg)																					
Un-packaged net wt.	3.73 lbs. (1.69 kg)																					
Dimensions	543.56 x 211.58 x 2.23 mm (L x W x H)																					
Included	Required Items (sold separately) – If purchased as building block	Optional Accessories (sold separately) – If purchased as building block																				
<p>(24) – DIMM slots with supports for standard DDR4 and Intel® Optane™ persistent memory 200 series</p> <p>(8) – PCIe* NVMe* OCuLink connectors</p> <p>(2) – Processor carrier clip, for 3rd Gen Intel® Xeon® Scalable processor family supported by the Intel® Server D50TNP Family – iPN J98484-xxx</p> <p>(9) – Heat sinks for voltage regulators</p> <p>See Table 4 for the complete board feature set.</p>	<p>(2) – 3rd Gen Intel® Xeon® Scalable processor family</p> <p>See Section 1.2 for processors supported.</p> <p>Up to (16) ECC standard DDR4 memory and up to (8) Intel® Optane™ persistent memory 200 series</p> <p>See Section 1.3 for memory supported.</p>	<p>(1) – Intel® Virtual RAID on CPU (Intel® VROC) – Standard Model Key – iPC VROCSTANMOD OR</p> <p>(1) – Intel® Virtual RAID on CPU (Intel® VROC) – Premium Model Key – iPC VROCPREMMOD</p> <p>(1) – Intel® Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 OR</p> <p>(1) – Intel® Trusted Platform Module (TPM) 2.0 China version – iPC AXXTPMCHNE8</p> <p>See Chapter 3 for all available accessory options.</p>																				

Table 8. Intel® Server Board D50TNP1SBCR Product Specifications

Intel® Server Board D50TNP1SBCR Intel® Server Board D50TNP DDR4 Only																						
	<table><tr><td>iPC</td><td>D50TNP1SBCR</td></tr><tr><td>MM#</td><td>99AA23</td></tr><tr><td>UPC</td><td>00735858469326</td></tr><tr><td>EAN</td><td>5032037207898</td></tr><tr><td>MOQ</td><td>1</td></tr></table>	iPC	D50TNP1SBCR	MM#	99AA23	UPC	00735858469326	EAN	5032037207898	MOQ	1	<table><tr><td>Product type</td><td>Server board only product or spare FRU</td></tr><tr><td>Form factor</td><td>Half-Width</td></tr><tr><td>Packaged gross weight.</td><td>6.77 lbs. (3.07 kg)</td></tr><tr><td>Un-packaged net wt.</td><td>3.73 lbs. (1.69 kg)</td></tr><tr><td>Dimensions</td><td>543.56 x 211.58 x 2.23 mm (L x W x H)</td></tr></table>	Product type	Server board only product or spare FRU	Form factor	Half-Width	Packaged gross weight.	6.77 lbs. (3.07 kg)	Un-packaged net wt.	3.73 lbs. (1.69 kg)	Dimensions	543.56 x 211.58 x 2.23 mm (L x W x H)
	iPC	D50TNP1SBCR																				
MM#	99AA23																					
UPC	00735858469326																					
EAN	5032037207898																					
MOQ	1																					
Product type	Server board only product or spare FRU																					
Form factor	Half-Width																					
Packaged gross weight.	6.77 lbs. (3.07 kg)																					
Un-packaged net wt.	3.73 lbs. (1.69 kg)																					
Dimensions	543.56 x 211.58 x 2.23 mm (L x W x H)																					
Included– If purchased as building block or spare FRU	Required Items (sold separately) – If purchased as building block	Optional Accessories (sold separately) – If purchased as building block																				
<p>(16) – DIMM slots with supports for standard DDR4</p> <p>(2) – Processor carrier clip, for 3rd Gen Intel® Xeon® Scalable processor family supported by the Intel® Server D50TNP Family – iPN J98484-xxx</p> <p>(9) – Heat sinks for voltage regulators</p> <p>See Table 4 for the complete board feature set.</p>	<p>(2) – 3rd Gen Intel® Xeon® Scalable processor family</p> <p>See Section 1.2 for processors supported.</p> <p>Up to (16) ECC standard DDR4 memory</p> <p>See Section 1.3 for memory supported.</p>	<p>(1) – Intel® Virtual RAID on CPU (Intel® VROC) – Standard Model Key – iPC VROCSTANMOD</p> <p>(1) – Intel® Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 OR</p> <p>(1) – Intel® Trusted Platform Module (TPM) 2.0 China version – iPC AXXTPMCHNE8</p> <p>See Chapter 3 for all available accessory options.</p>																				

2.2 Intel® D50TNP Module Options

The product tables found in this section provide order code information and detailed descriptions for each available module building block option. The lower sections of each table identify:

- **Included** – The ship along components of the specified chassis product code (product BOM).
- **Required items** – Hardware required to be installed to the base system to achieve basic functionality using the default system feature set. Required items are sold separately.
- **Optional accessories** – Some of the available accessories that can be installed to enhance the basic feature set of the server board/chassis. Optional accessories are sold separately. Additional accessories are in [Chapter 3](#).

Note: Items identified with an iPC (Intel Product Code) are orderable building block options, accessories, or spare FRUs. In an effort to provide the complete product bill of materials, the ship along components list in each product table include items identified by description and by iPN (Intel Part Number). The iPN information is provided for reference only. These components are not orderable as spares or accessories.

Table 9. Compute Module D50TNP1MHCPAC Specifications


Compute Module D50TNP1MHCPAC																						
Compute Module 1U Half-Width Air-Cooled																						
 <div>TNP30760</div>	<table><tr><td>iPC</td><td>D50TNP1MHCPAC</td></tr><tr><td>MM#</td><td>99A2DZ</td></tr><tr><td>UPC</td><td>00735858469333</td></tr><tr><td>EAN</td><td>5032037207904</td></tr><tr><td>MOQ</td><td>1</td></tr></table>	iPC	D50TNP1MHCPAC	MM#	99A2DZ	UPC	00735858469333	EAN	5032037207904	MOQ	1	<table><tr><td>Product type</td><td>L6 Compute module building block or spare FRU</td></tr><tr><td>Form factor</td><td>Density-optimized 1U</td></tr><tr><td>Packaged gross wt.</td><td>12.46 lbs. (5.65 kg)</td></tr><tr><td>Un-packaged net wt.</td><td>9.39 lbs. (4.26 kg)</td></tr><tr><td>Dimensions</td><td>591.4 x 216 x 40.6 mm (L x W x H)</td></tr></table>	Product type	L6 Compute module building block or spare FRU	Form factor	Density-optimized 1U	Packaged gross wt.	12.46 lbs. (5.65 kg)	Un-packaged net wt.	9.39 lbs. (4.26 kg)	Dimensions	591.4 x 216 x 40.6 mm (L x W x H)
	iPC	D50TNP1MHCPAC																				
MM#	99A2DZ																					
UPC	00735858469333																					
EAN	5032037207904																					
MOQ	1																					
Product type	L6 Compute module building block or spare FRU																					
Form factor	Density-optimized 1U																					
Packaged gross wt.	12.46 lbs. (5.65 kg)																					
Un-packaged net wt.	9.39 lbs. (4.26 kg)																					
Dimensions	591.4 x 216 x 40.6 mm (L x W x H)																					
Included	Required Items (sold separately) – If purchased as building block	Optional Accessories (sold separately) – If purchased as building block																				
<div>(1) – 1U half-width module tray – iPN K53210-xxx</div> <div>(1) – Intel® Server Board D50TNP – iPC D50TNP1SB</div> <div>(1) – 1U compute module air duct – iPN K61940-xxx</div> <div>(2) – 1U low-profile PCIe riser card – iPC TNP1URISER</div> <div>(2) – 1U riser bracket to support TNP1URISER – iPN K25206-xxx</div> <div>(1) – 1U air cooled heat sink front – iPC TNP1UHSF</div> <div>(1) – 1U air cooled heat sink back – iPC TNP1UHSB</div> <div>(2) – Processor carrier clip, for 3rd Gen Intel® Xeon® Scalable processor family supported by the Intel® Server D50TNP Family – iPN J98484-xxx</div> <div>(2) – M.2 Heat Sink air cooled – iPC TNPM2HS</div>	<div>(2) – 3rd Gen Intel® Xeon® Scalable processor family</div> <div>See Section 1.2 for processors supported.</div> <div>Up to (16) ECC standard DDR4 memory and up to (8) Intel® Optane™ persistent memory 200 series</div> <div>See Section 1.3 for memory supported.</div> <div>DIMM Blank – iPC TNPDMMBLNK</div> <div>To populate DIMM slots not populated by memory DIMMs</div>	<div>(1) – I/O breakout cable – iPC AXXCONNTDBG</div> <div>(1) – Intel® Virtual RAID on CPU (Intel® VROC) – Standard Model Key – iPC VROCSTANMOD</div> <div>(1) – Intel® Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 OR</div> <div>(1) – Intel® Trusted Platform Module (TPM) 2.0 China version – iPC AXXTPMCHNE8</div> <div>See Chapter 3 for all available accessory options.</div>																				

Table 10. Compute Module D50TNP1MHCRCAC Specifications


Compute Module D50TNP1MHCRCAC																						
Compute Module 1U Half-Width Air-Cooled DDR4 Only																						
 <div>TNP30770</div>	<table><tr><td>iPC</td><td>D50TNP1MHCRCAC</td></tr><tr><td>MM#</td><td>99A84D</td></tr><tr><td>UPC</td><td>00735858469357</td></tr><tr><td>EAN</td><td>5032037207928</td></tr><tr><td>MOQ</td><td>1</td></tr></table>	iPC	D50TNP1MHCRCAC	MM#	99A84D	UPC	00735858469357	EAN	5032037207928	MOQ	1	<table><tr><td>Product type</td><td>L6 Compute module building block or spare FRU</td></tr><tr><td>Form factor</td><td>Density-optimized 1U</td></tr><tr><td>Packaged gross wt.</td><td>12.88 lbs. (5.84 kg)</td></tr><tr><td>Un-packaged net wt.</td><td>9.83 lbs. (4.46 kg)</td></tr><tr><td>Dimensions</td><td>591.4 x 216 x 40.6 mm (L x W x H)</td></tr></table>	Product type	L6 Compute module building block or spare FRU	Form factor	Density-optimized 1U	Packaged gross wt.	12.88 lbs. (5.84 kg)	Un-packaged net wt.	9.83 lbs. (4.46 kg)	Dimensions	591.4 x 216 x 40.6 mm (L x W x H)
	iPC	D50TNP1MHCRCAC																				
MM#	99A84D																					
UPC	00735858469357																					
EAN	5032037207928																					
MOQ	1																					
Product type	L6 Compute module building block or spare FRU																					
Form factor	Density-optimized 1U																					
Packaged gross wt.	12.88 lbs. (5.84 kg)																					
Un-packaged net wt.	9.83 lbs. (4.46 kg)																					
Dimensions	591.4 x 216 x 40.6 mm (L x W x H)																					
Included	Required Items (sold separately) – If purchased as building block	Optional Accessories (sold separately) – If purchased as building block																				
<div>(1) – 1U half-width module tray – iPN K53210-xxx</div> <div>(1) – Intel® Server Board D50TNP DDR4 only – iPC D50TNP1SBCR</div> <div>(1) – 1U compute module air duct – iPN K61940-xxx</div> <div>(2) – 1U low-profile PCIe riser card for D50TNP DDR4 only server board – iPC TNP1UCRRISER</div> <div>(2) – 1U riser bracket to support TNP1UCRRISER – iPN K25206-xxx</div> <div>(1) – 1U air cooled heat sink front – iPC TNP1UHSF</div> <div>(1) – 1U air cooled heat sink back – iPC TNP1UHSB</div> <div>(4) – DIMM baffles – iPN M19136-xxx</div> <div>(2) – Processor carrier clip, for 3rd Gen Intel® Xeon® Scalable processor family supported by the Intel® Server D50TNP Family – iPN J98484-xxx</div> <div>(2) – M.2 Heat Sink air cooled – iPC TNPM2HS</div>	<div>(2) – 3rd Gen Intel® Xeon® Scalable processor family</div> <div>See Section 1.2 for processors supported.</div> <div>Up to (16) ECC standard DDR4 memory</div> <div>See Section 1.3 for memory supported.</div> <div>DIMM Blank – iPC TNPDMMBLNK</div> <div>To populate DIMM slots not populated by memory DIMMs</div>	<div>(1) – I/O breakout cable – iPC AXXCONNTDBG</div> <div>(1) – Intel® Virtual RAID on CPU (Intel® VROC) – Standard Model Key – iPC VROCSTANMOD</div> <div>(1) – Intel® Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 OR</div> <div>(1) – Intel® Trusted Platform Module (TPM) 2.0 China version – iPC AXXTPMCHNE8</div> <div>See Chapter 3 for all available accessory options.</div>																				

Table 11. Compute Module D50TNP1MHEVAC Specifications

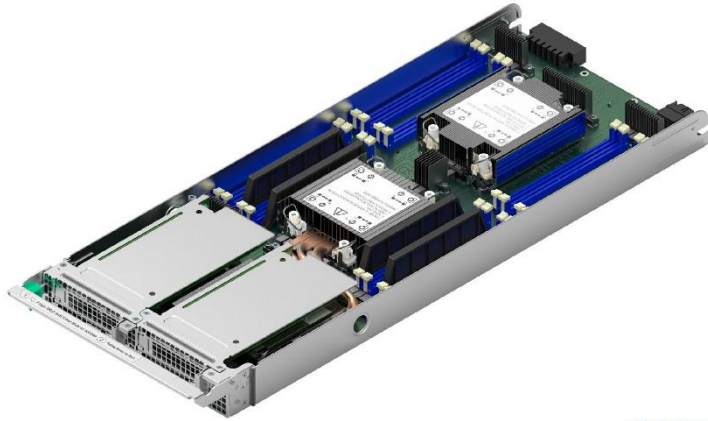
Compute Module D50TNP1MHEVAC		
Compute Module 1U Half-Width EVAC Air-Cooled DDR4 Only		
 		

Table 12. Compute Module D50TNP1MHCRLC Specifications

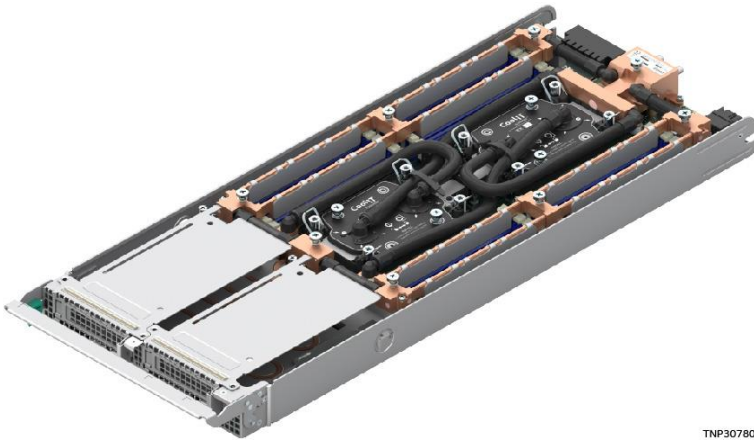
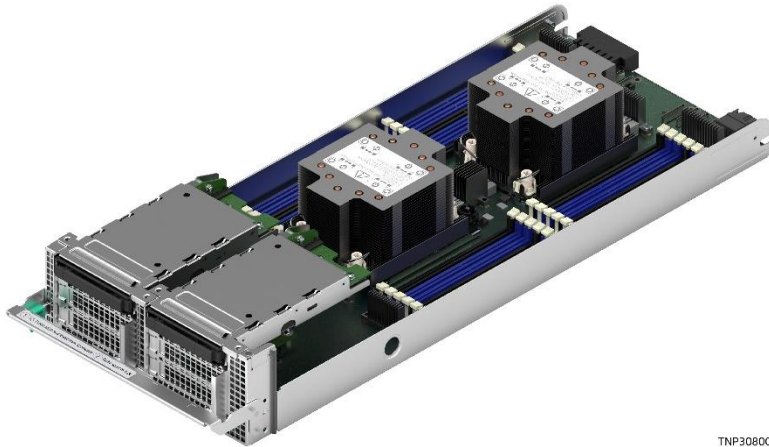
Compute Module D50TNP1MHCRLC																							
Compute Module 1U Half-Width Liquid-Cooled DDR4 Only																							
 <div>TNP30780</div>	<table><tr><td>iPC</td><td>D50TNP1MHCRLC</td></tr><tr><td>MM#</td><td>99A84F</td></tr><tr><td>UPC</td><td>00735858469364</td></tr><tr><td>EAN</td><td>5032037207935</td></tr><tr><td>MOQ</td><td>1</td></tr></table>	iPC	D50TNP1MHCRLC	MM#	99A84F	UPC	00735858469364	EAN	5032037207935	MOQ	1	<table><tr><td>Product type</td><td>L6 Compute module building block or spare FRU</td></tr><tr><td>Form factor</td><td>Density-optimized 1U</td></tr><tr><td>Packaged gross wt.</td><td>18.80 lbs. (8.53 kg)</td></tr><tr><td>Un-packaged net wt.</td><td>15.76 lbs. (7.15 kg)</td></tr><tr><td>Dimensions</td><td>591.4 x 216 x 40.6 mm (L x W x H)</td></tr></table>		Product type	L6 Compute module building block or spare FRU	Form factor	Density-optimized 1U	Packaged gross wt.	18.80 lbs. (8.53 kg)	Un-packaged net wt.	15.76 lbs. (7.15 kg)	Dimensions	591.4 x 216 x 40.6 mm (L x W x H)
	iPC	D50TNP1MHCRLC																					
MM#	99A84F																						
UPC	00735858469364																						
EAN	5032037207935																						
MOQ	1																						
Product type	L6 Compute module building block or spare FRU																						
Form factor	Density-optimized 1U																						
Packaged gross wt.	18.80 lbs. (8.53 kg)																						
Un-packaged net wt.	15.76 lbs. (7.15 kg)																						
Dimensions	591.4 x 216 x 40.6 mm (L x W x H)																						
Included	Required Items (sold separately) – If purchased as building block	Optional Accessories (sold separately) – If purchased as building block																					
<div>(1) – 1U half-width module tray – iPN K53210-xxx</div> <div>(1) – Intel® Server Board D50TNP DDR4 only – iPC D50TNP1SBCR</div> <div>(2) – 1U low-profile PCIe riser card for D50TNP DDR4 only server board – iPC TNP1UCRRISER</div> <div>(2) – 1U riser bracket to support TNP1UCRRISER – iPN K25206-xxx</div> <div>(1) – DIMM latch tool for liquid cooled module – iPC TNPDMMLTHTL</div> <div>(2) – Processor carrier clip, for 3rd Gen Intel® Xeon® Scalable processor family supported by the Intel® Server D50TNP Family – iPN J98484-xxx</div> <div>(1) – Liquid cooling loop – iPC TNPLCLPCM, which includes 8 pcs of DIMM clips – iPC FXXWKLCDMCLP</div>	<div>(2) – M.2 heat sink liquid cooled – iPC TNPM2HSLC</div> <div>(2) – 3rd Gen Intel® Xeon® processor Scalable family</div> <div>See Section 1.2 for processors supported</div> <div>Up to (16) ECC standard DDR4 memory.</div> <div>See Section 1.3 for memory supported.</div> <div>(1) – Liquid-cooling VR TIMM application tools – iPC TNPLCVRTL5</div> <div>(1) – Liquid-cooling VR TIMM application nozzle – iPC TNPLCVRTNZ</div> <div>(1) – Liquid-cooling VR TIMM compound – iPC TNPLCVRCMPD</div>	<div>(1) – I/O breakout cable – iPC AXXCONNTDBG</div> <div>(1) – Intel® Virtual RAID on CPU (Intel® VROC) – Standard Model Key – iPC VROCSTANMOD</div> <div>(1) – Intel® Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 OR</div> <div>(1) – Intel® Trusted Platform Module (TPM) 2.0 China version – iPC AXXTPMCHNE8</div> <div>See Chapter 3 for all available accessory options.</div>																					

Table 13. Management Module D50TNP2MHSVAC Specifications**Management Module D50TNP2MHSVAC**

Management Module 2U Half-Width Air-Cooled



TNP30800

iPC	D50TNP2MHSVAC
MM#	99A2F1
UPC	00735858469371
EAN	5032037207942
MOQ	1

Product type	L6 Management Module building block or spare FRU
Form factor	Density-optimized 2U
Packaged gross wt.	15.65 lbs. (7.10 kg)
Un-packaged net wt.	11.77 lbs. (5.34 kg)
Dimensions	591.4 x 216 x 82 mm (L x W x H)

Included

- (1) – 2U half-width module tray – iPN K53211-xxx
- (1) – Intel® Server Board D50TNP – **iPC D50TNP1SB**
- (1) – 2U Management Module air duct – iPN K61939-xxx
- (2) – 2U low-profile PCIe* riser card – **iPC TNP2URISER**, with U.2 PCIe* NVMe* SSD adapter card included
- (2) – 2U riser bracket to support TNP2URISER – iPN 25207-xxx
- (1) – 2U air cooled heat sink front – **iPC TNP2UHSF**
- (1) – 2U air cooled heat sink back – **iPC TNP2UHSB**
- (2) – Processor carrier clip, for 3rd Gen Intel® Xeon® Scalable processor family supported by the Intel® Server D50TNP Family – iPN J98484-xxx
- (2) – M.2 heat sink air cooled – **iPC TNPM2HS**
- (2) – 2.5" tool-less SSD drive carrier – iPN J36439-xxx

**Required Items (sold separately)
– If purchased as building block**

- (2) – 3rd Gen Intel® Xeon® Scalable processor family
See [Section 1.2](#) for processors supported
- Up to (16) ECC standard DDR4 memory and up to (8) Intel® Optane™ persistent memory 200 series
See [Section 1.3](#) for memory supported.
- DIMM Blank – **iPC TNPDMMBLNK**
To populate DIMM slots not populated by memory DIMMs

Optional Accessories (sold separately) – If purchased as building block

- (1) – I/O breakout cable – **iPC AXXCNNNTDBG**
- (1) – Intel® Virtual RAID on CPU (Intel® VROC) – Standard Model Key – **iPC VROCSTANMOD**
- (1) – Intel® Trusted Platform Module (TPM) 2.0 – **iPC AXXTPMENC8** **OR**
- (1) – Intel® Trusted Platform Module (TPM) 2.0 China version – **iPC AXXTPMCHNE8**

See [Chapter 3](#) for all available accessory options.

Table 14. Storage Module D50TNP2MHSTAC Specifications


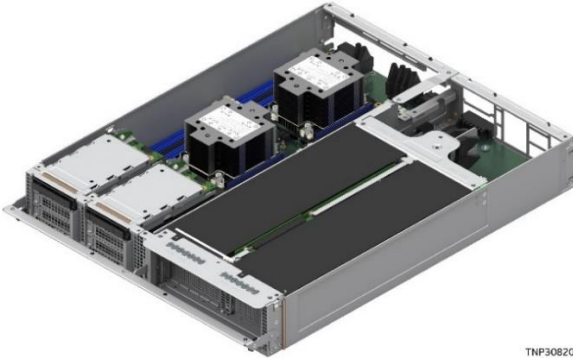
Storage Module D50TNP2MHSTAC																						
Storage Module 2U Half-Width Air-Cooled																						
 <div>Ref #: TNP3081</div>	<table><tr><td>iPC</td><td>D50TNP2MHSTAC</td></tr><tr><td>MM#</td><td>99A27J</td></tr><tr><td>UPC</td><td>00735858469388</td></tr><tr><td>EAN</td><td>5032037207959</td></tr><tr><td>MOQ</td><td>1</td></tr></table>	iPC	D50TNP2MHSTAC	MM#	99A27J	UPC	00735858469388	EAN	5032037207959	MOQ	1	<table><tr><td>Product type</td><td>L6 Storage Module building block or spare FRU</td></tr><tr><td>Form factor</td><td>Density-optimized 2U</td></tr><tr><td>Packaged gross wt.</td><td>20.94 lbs. (9.50 kg)</td></tr><tr><td>Un-packaged net wt.</td><td>17.00 lbs. (7.71 kg)</td></tr><tr><td>Dimensions</td><td>591.4 x 216 x 82 mm (L x W x H)</td></tr></table>	Product type	L6 Storage Module building block or spare FRU	Form factor	Density-optimized 2U	Packaged gross wt.	20.94 lbs. (9.50 kg)	Un-packaged net wt.	17.00 lbs. (7.71 kg)	Dimensions	591.4 x 216 x 82 mm (L x W x H)
	iPC	D50TNP2MHSTAC																				
MM#	99A27J																					
UPC	00735858469388																					
EAN	5032037207959																					
MOQ	1																					
Product type	L6 Storage Module building block or spare FRU																					
Form factor	Density-optimized 2U																					
Packaged gross wt.	20.94 lbs. (9.50 kg)																					
Un-packaged net wt.	17.00 lbs. (7.71 kg)																					
Dimensions	591.4 x 216 x 82 mm (L x W x H)																					
Included	Required Items (sold separately) – If purchased as building block	Optional Accessories (sold separately) – If purchased as building block																				
<div>(1) – 2U half-width module tray – iPN K74857-xxx</div> <div>(1) – Intel® Server Board D50TNP – iPC D50TNP1SB</div> <div>(1) – 1U Storage Module air duct right – iPN K88592-xxx</div> <div>(1) – 1U Storage Module air duct left – iPN K88590-xxx</div> <div>(2) – 1U low-profile PCIe* riser card – iPC TNP1URISER</div> <div>(2) – 1U riser bracket to support TNP1URISER – iPN K25206-xxx</div> <div>(2) – M.2 heat sink air cooled – iPC TNPM2HS</div> <div>(1) – 1U air cooled heat sink front – iPC TNP1UHSF</div> <div>(1) – 1U air cooled heat sink back – iPC TNP1UHSB</div> <div>(2) – Processor carrier clip, for 3rd Gen Intel® Xeon® Scalable processor family supported by the Intel® Server D50TNP Family – iPN J98484-xxx</div> <div>(1) – Storage Module docking board – iPC TNPSTDCKBRD</div> <div>(2) – OCuLink cable 520 mm – iPN K73563-xxx</div> <div>(2) – OCuLink cable 125 mm – iPN K73567-xxx</div> <div>(2) – OCuLink cable 145 mm – iPN K73568-xxx</div> <div>(2) – OCuLink cable 140 mm – iPN K73570-xxx</div> <div>(1 each) – OCuLink connector covers for J25, J26, J29, and J30 – iPN K74231-xxx</div> <div>(1 each) – OCuLink connector covers for J27 and J28 – iPN K74230-xxx</div>	<div>Storage Module ruler blank – iPC TNPRLRBLNK</div> <div>Kit includes 4 pieces per pack</div> <div>(2) – 3rd Gen Intel® Xeon® Scalable processor family</div> <div>See Section 1.2 for processors supported</div> <div>Up to (16) ECC standard DDR4 memory and up to (8) Intel® Optane™ persistent memory 200 series</div> <div>See Section 1.3 for memory supported.</div> <div>DIMM Blank – iPC TNPDMMBLNK</div> <div>To populate DIMM slots not populated by memory DIMMs</div>	<div>(1) – I/O breakout cable – iPC AXXCONNTDBG</div> <div>(1) – Intel® Virtual RAID on CPU (Intel® VROC) – Standard Model Key – iPC VROCSTANMOD OR</div> <div>(1) – Intel® Virtual RAID on CPU (Intel® VROC) – Premium Model Key – iPC VROCPREMMOD</div> <div>(1) – Intel® Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 OR</div> <div>(1) – Intel® Trusted Platform Module (TPM) 2.0 China version – iPC AXXTPMCHNE8</div> <div>See Chapter 3 for all available accessory options.</div>																				

Table 15. Compute Module D50TNP2MFALAC Specifications

Accelerator Module D50TNP2MFALAC																						
Accelerator Module 2U Full-Width Air-Cooled																						
 <div>TNP30820</div>	<table><tr><td>iPC</td><td>D50TNP2MFALAC</td></tr><tr><td>MM#</td><td>99A2F4</td></tr><tr><td>UPC</td><td>00735858469395</td></tr><tr><td>EAN</td><td>5032037207966</td></tr><tr><td>MOQ</td><td>1</td></tr></table>	iPC	D50TNP2MFALAC	MM#	99A2F4	UPC	00735858469395	EAN	5032037207966	MOQ	1	<table><tr><td>Product type</td><td>L6 Accelerator Module building block or spare FRU</td></tr><tr><td>Form factor</td><td>Density-optimized 2U</td></tr><tr><td>Packaged gross wt.</td><td>33.71 lbs. (15.29 kg)</td></tr><tr><td>Un-packaged net wt.</td><td>19.80 lbs. (8.98 kg)</td></tr><tr><td>Dimensions</td><td>591.25 x 437.1 x 82 mm (L x W x H)</td></tr></table>	Product type	L6 Accelerator Module building block or spare FRU	Form factor	Density-optimized 2U	Packaged gross wt.	33.71 lbs. (15.29 kg)	Un-packaged net wt.	19.80 lbs. (8.98 kg)	Dimensions	591.25 x 437.1 x 82 mm (L x W x H)
	iPC	D50TNP2MFALAC																				
MM#	99A2F4																					
UPC	00735858469395																					
EAN	5032037207966																					
MOQ	1																					
Product type	L6 Accelerator Module building block or spare FRU																					
Form factor	Density-optimized 2U																					
Packaged gross wt.	33.71 lbs. (15.29 kg)																					
Un-packaged net wt.	19.80 lbs. (8.98 kg)																					
Dimensions	591.25 x 437.1 x 82 mm (L x W x H)																					
Included	Required Items (sold separately) – If purchased as building block	Optional Accessories (sold separately) – If purchased as building block																				
<div>(1) – 2U full-width module tray – iPN K85397-xxx</div> <div>(1) – Intel® Server Board D50TNP – iPC D50TNP1SB</div> <div>(1) – 2U Accelerator Module air duct – iPN K85780-xxx</div> <div>(2) – 2U low-profile PCIe* riser card – iPC TNP2URISER, with U.2 PCIe* NVMe* SSD adapter card included</div> <div>(2) – 2U riser bracket to support TNP2URISER – iPN K25207-xxx</div> <div>(2) – 2.5" tool-less SSD drive carrier – iPN J36439-xxx</div> <div>(2) – M.2 heat sink air cooled – iPC TNPM2HS</div> <div>(1) – 2U air cooled heat sink front – iPC TNP2UHSF</div> <div>(1) – 2U air cooled heat sink back – iPC TNP2UHSB</div> <div>(2) – Processor carrier clip, for 3rd Gen Intel® Xeon® Scalable processor family supported by the Intel® Server D50TNP Family – iPN J98484-xxx</div> <div>(1) – 2U full height, full length, double width PCIe* riser card 1 – iPC TNPACCLRISER1</div> <div>(1) – 2U full height, full length, double width PCIe* riser card 2 – iPC TNPACCLRISER2</div> <div>(1) – Accelerator Module power connector board – iPC TNPACCLNBRD</div> <div>(2) – Power cable 110 mm to connect TNPACCLRISER1 and TNPACCLRISER 2 to TNPACCLNBRD – iPN K73519-xxx</div> <div>(1 each) – OCuLink cable 740 mm and 710 mm – iPN K87949-xxx</div> <div>(2) – OCuLink cable 260 mm – iPN K87954-xxx</div> <div>(2 each) – OCuLink cable 370 mm and 340 mm – iPN K88047-xxx</div> <div>(1 each) – OCuLink connector covers for J25, J26, J29, and J30 – iPN K74231-xxx</div> <div>(1 each) – OCuLink connector covers for J27 and J28 – iPN K74230-xxx</div>	<div>(1) –Accelerator Module card kit A100 – iPC TNPACCLBZA100</div> <div>(1) – Accelerator Module card kit DC – iPC TNPACCLBZDC</div> <div>(1) – Accelerator Module card kit V100 – iPC TNPACCLBZV100</div> <div>Note: Each accelerator card kit must be ordered one per accelerator add-in card. The type of accelerator card kit depends on the model of accelerator add-in card being used.</div> <div>(2) – 3rd Gen Intel® Xeon® Scalable processor family</div> <div>See Section 1.2 for processors supported.</div> <div>Up to (16) ECC standard DDR4 memory and up to (8) Intel® Optane™ persistent memory 200 series</div> <div>See Section 1.3 for memory supported.</div> <div>DIMM Blank – iPC TNPDMMBLNK</div> <div>To populate DIMM slots not populated by memory DIMMs</div>	<div>(1) – I/O breakout cable – iPC AXXCONNTDBG</div> <div>(1) – Intel® Virtual RAID on CPU (Intel® VROC) – Standard Model Key – iPC VROCSTANMOD</div> <div>(1) – Intel® Trusted Platform Module (TPM) 2.0 – iPC AXXTPMENC8 OR</div> <div>(1) – Intel® Trusted Platform Module (TPM) 2.0 China version – iPC AXXTPMCHNE8</div> <div>See Chapter 3 for all available accessory options.</div> <div>Note: Accelerator Module D50TNP2MFALAC supports up to four accelerator add-in cards of the same type. Mixed types in a single module are not supported. See the <i>Intel® Server D50TNP Family Technical Product Specification</i> for detailed information on the support for accelerator add-in cards.</div>																				

2.3 Intel® Server Chassis FC2000 Options

The product tables found in this section provide order code information and detailed descriptions for each available chassis option. The parts listed as included are ship along components in the product BOM.

For optional accessories, see [Chapter 3](#).

Note: Items identified with an iPC (Intel Product Code) are orderable building block options, accessories, or spare FRUs. In an effort to provide the complete product bill of materials, the ship along components list in each product table include items identified by description and by iPN (Intel Part Number). The iPN information is provided for reference only. These components are not orderable as spares or accessories.

Table 16. Intel® Server Chassis FC2HLC21W3 Specifications


Intel® Server Chassis FC2HLC21W3			
Intel® Server Chassis FC2000 Half-Width Configuration Liquid-Cooled (2100W)			
 <			

Table 17. Intel® Server Chassis FC2HAC21W3 Specifications


Intel® Server Chassis FC2HAC21W3			
Intel® Server Chassis FC2000 Half-Width Configuration Air-Cooled (2100W)			
 <			

Table 18. Intel® Server Chassis FC2HAC16W3 Specifications



Intel® Server Chassis FC2HAC16W3			
Intel® Server Chassis FC2000 Half-Width Configuration Air-Cooled (1600W)			
 <			

Table 19. Intel® Server Chassis FC2FAC16W3 Specifications

Intel® Server Chassis FC2FAC16W3		
Intel® Server Chassis FC2000 Full-Width Configuration Air-Cooled (1600W)		
 <		

3. Accessory Options

The following sections identify available accessory kits supported in the Intel® Server D50TNP Family.

Table 20. Miscellaneous Accessory Options

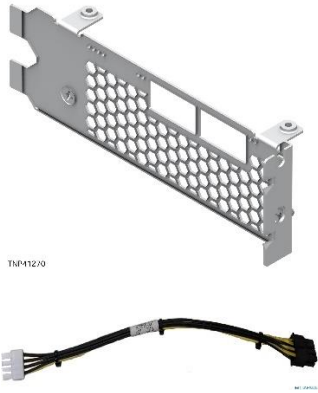
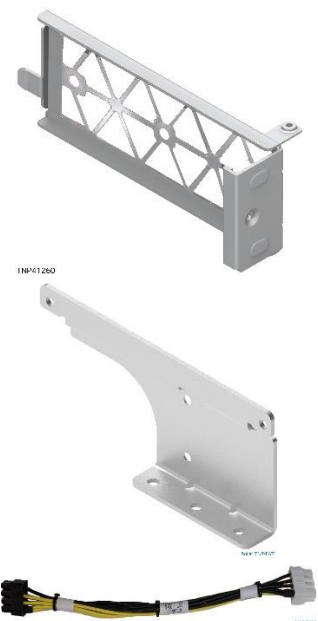
Image	Details	Description										
 <p>TNP-H12-0</p> <p>K73545-xxx</p>	<p>Accelerator Module Card Kit DC</p> <table><tr><td>iPC</td><td>TNPACCLBZDC</td></tr><tr><td>MM#</td><td>99A2AR</td></tr><tr><td>UPC</td><td>00735858469425</td></tr><tr><td>EAN</td><td>5032037207997</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Accessory kit</p>	iPC	TNPACCLBZDC	MM#	99A2AR	UPC	00735858469425	EAN	5032037207997	MOQ	1	<p>Supports Programmable Acceleration Card with Intel® Stratix® 10 SX FPGA add-in card for Accelerator Module 2U Full-Width Air-Cooled.</p> <p>Kit includes:</p> <p>(1) – Front metal bracket – iPN K85872-xxx</p> <p>(1) – Power cable – iPN K73545-xxx, used to connect the add-in card to the Accelerator Module connector board.</p> <p>Each accelerator card kit DC can only support one Intel® Stratix® 10 SX FPGA accelerator add-in card. The kit must be ordered one per card.</p>
iPC	TNPACCLBZDC											
MM#	99A2AR											
UPC	00735858469425											
EAN	5032037207997											
MOQ	1											
 <p>TNP-H12B0</p> <p>K86006-xxx</p> <p>K73520-xxx</p>	<p>Accelerator Module Card Kit V100</p> <table><tr><td>iPC</td><td>TNPACCLBZV100</td></tr><tr><td>MM#</td><td>99A2HZ</td></tr><tr><td>UPC</td><td>00735858469432</td></tr><tr><td>EAN</td><td>5032037208000</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Accessory kit</p>	iPC	TNPACCLBZV100	MM#	99A2HZ	UPC	00735858469432	EAN	5032037208000	MOQ	1	<p>Supports Nvidia® Tesla® V100 accelerator add-in card for Accelerator Module 2U Full-Width Air-Cooled.</p> <p>Kit includes:</p> <p>(1) – Front metal bracket – iPN K85408-xxx</p> <p>(1) – Rear extension bracket – iPN K86006-xxx</p> <p>(1) – Power cable – iPN K73520-xxx, used to connect the add-in card to the Accelerator Module connector board.</p> <p>Each accelerator card kit V100 can only support one Nvidia® Tesla® V100 accelerator add-in card. The kit must be ordered one per card.</p>
iPC	TNPACCLBZV100											
MM#	99A2HZ											
UPC	00735858469432											
EAN	5032037208000											
MOQ	1											

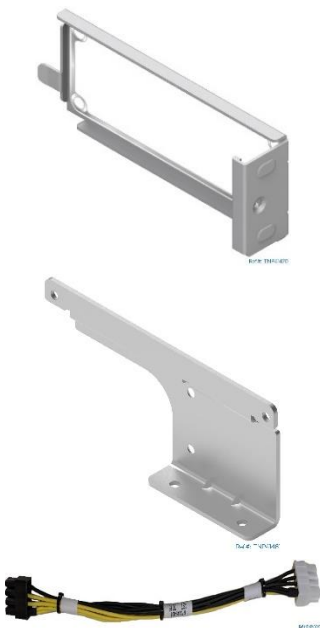


Image	Details	Description										
	<p>Accelerator Module Card Kit A100</p> <table><tr><td>iPC</td><td>TNPACCLBZA100</td></tr><tr><td>MM#</td><td>99AJJC</td></tr><tr><td>UPC</td><td>00735858484893</td></tr><tr><td>EAN</td><td>5032037221658</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Accessory kit</p>	iPC	TNPACCLBZA100	MM#	99AJJC	UPC	00735858484893	EAN	5032037221658	MOQ	1	<p>Supports Nvidia* Tesla* A100 40 GB accelerator add-in card for Accelerator Module 2U Full-Width Air-Cooled</p> <p>Note: This kit can only support 40 GB version of Nvidia* Tesla* A100 accelerator add-in card.</p> <p>Kit includes:</p> <p>(1) – Front metal bracket – iPN M33267-xxx</p> <p>(1) – Rear extension bracket – iPN M33268-xxx</p> <p>(1) – Power cable – iPN K73520-xxx, used to connect the add-in card to the Accelerator Module connector board.</p> <p>Each accelerator card kit A100 can only support one Nvidia* Tesla* A100 40 GB accelerator add-in card. The kit must be ordered one per card.</p>
iPC	TNPACCLBZA100											
MM#	99AJJC											
UPC	00735858484893											
EAN	5032037221658											
MOQ	1											
	<p>Liquid Cooling VR TIMM Application Tools</p> <table><tr><td>iPC</td><td>TNPLCVRTLS</td></tr><tr><td>MM#</td><td>99AAKL</td></tr><tr><td>UPC</td><td>00735858474306</td></tr><tr><td>EAN</td><td>5032037212298</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Accessory kit</p>	iPC	TNPLCVRTLS	MM#	99AAKL	UPC	00735858474306	EAN	5032037212298	MOQ	1	<p>To be used only for front voltage regulator thermal interface material on liquid-cooled modules.</p> <p>See the <i>Intel® Server D50TNP Family Integration and Service Guide</i> for installation, replacement, and usage instructions.</p>
iPC	TNPLCVRTLS											
MM#	99AAKL											
UPC	00735858474306											
EAN	5032037212298											
MOQ	1											
	<p>Liquid Cooling VR TIMM Application Nozzles</p> <table><tr><td>iPC</td><td>TNPLCVRTNZ</td></tr><tr><td>MM#</td><td>99AF47</td></tr><tr><td>UPC</td><td>00735858476263</td></tr><tr><td>EAN</td><td>5032037214148</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Accessory kit</p>	iPC	TNPLCVRTNZ	MM#	99AF47	UPC	00735858476263	EAN	5032037214148	MOQ	1	<p>To be used only for front voltage regulator thermal interface material on Intel® D50TNP liquid-cooled modules.</p> <p>See the <i>Intel® Server D50TNP Integration and Service Guide</i> for installation, replacement, and usage instructions.</p>
iPC	TNPLCVRTNZ											
MM#	99AF47											
UPC	00735858476263											
EAN	5032037214148											
MOQ	1											


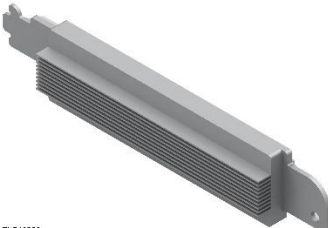
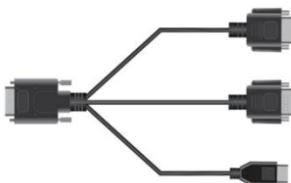

Image	Details	Description										
	<p>Liquid Cooling VR TIMM Compound</p> <table><tr><td>iPC</td><td>TNPLCVRCPD</td></tr><tr><td>MM#</td><td>99AAKM</td></tr><tr><td>UPC</td><td>00735858474313</td></tr><tr><td>EAN</td><td>5032037212304</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Accessory kit</p>	iPC	TNPLCVRCPD	MM#	99AAKM	UPC	00735858474313	EAN	5032037212304	MOQ	1	<p>To be used only for front voltage regulator thermal interface material on Intel® D50TNP liquid-cooled modules.</p> <p>See the <i>Intel® Server D50TNP Family Integration and Service Guide</i> for installation, replacement, and usage instructions.</p>
iPC	TNPLCVRCPD											
MM#	99AAKM											
UPC	00735858474313											
EAN	5032037212304											
MOQ	1											
	<p>M.2 Heat Sink Liquid Cooled Assembly</p> <table><tr><td>iPC</td><td>TNPM2HSLC</td></tr><tr><td>MM#</td><td>99A5Z9</td></tr><tr><td>UPC</td><td>00735858469586</td></tr><tr><td>EAN</td><td>5032037208154</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Accessory kit</p>	iPC	TNPM2HSLC	MM#	99A5Z9	UPC	00735858469586	EAN	5032037208154	MOQ	1	<p>M.2 heat sink spare kit for liquid-cooled modules. Compatible with TNP 1U riser and TNP 1U CR riser.</p> <p>Kit includes:</p> <p>(1) – M.2 heat sink and screw</p> <p>(1) – M.2 Thermal Interface Material</p>
iPC	TNPM2HSLC											
MM#	99A5Z9											
UPC	00735858469586											
EAN	5032037208154											
MOQ	1											
	<p>I/O breakout cable</p> <table><tr><td>iPC</td><td>AXXCONNTDBG</td></tr><tr><td>MM#</td><td>999D47</td></tr><tr><td>UPC</td><td>00735858424349</td></tr><tr><td>EAN</td><td>5032037166638</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Accessory kit</p>	iPC	AXXCONNTDBG	MM#	999D47	UPC	00735858424349	EAN	5032037166638	MOQ	1	<p>I/O breakout cable connector kit, compatible with all Intel® D50TNP Module options.</p> <p>Supports the following ports:</p> <p>(1) – serial port</p> <p>(1) – video port</p> <p>(2) – USB 3.0 and 2.0 ports</p>
iPC	AXXCONNTDBG											
MM#	999D47											
UPC	00735858424349											
EAN	5032037166638											
MOQ	1											
	<p>Ethernet Management Port Module</p> <table><tr><td>iPC</td><td>AXXFCEMP</td></tr><tr><td>MM#</td><td>999D48</td></tr><tr><td>UPC</td><td>00735858425988</td></tr><tr><td>EAN</td><td>5032037168182</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Accessory kit</p>	iPC	AXXFCEMP	MM#	999D48	UPC	00735858425988	EAN	5032037168182	MOQ	1	<p>Ethernet management port (EMP) module accessory kit, compatible with all Intel® D50TNP chassis options.</p> <ul style="list-style-type: none">• Offers two RJ45 ports for management of compute modules and system over 1Gbps Ethernet• Port forwarding• Hot-swappable• Access to all present BMCs in the system with only one RJ45 cable• Daisy-chain capability to access multiple systems with one Ethernet connection
iPC	AXXFCEMP											
MM#	999D48											
UPC	00735858425988											
EAN	5032037168182											
MOQ	1											






Image	Details	Description										
	<p>1U Compute Module Blank</p> <table><tr><td>iPC</td><td>AXXFC1UBLANK</td></tr><tr><td>MM#</td><td>999D49</td></tr><tr><td>UPC</td><td>00735858425995</td></tr><tr><td>EAN</td><td>5032037168199</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Accessory kit</p>	iPC	AXXFC1UBLANK	MM#	999D49	UPC	00735858425995	EAN	5032037168199	MOQ	1	1U module blank for the Intel® Server Chassis FC200 family.
iPC	AXXFC1UBLANK											
MM#	999D49											
UPC	00735858425995											
EAN	5032037168199											
MOQ	1											
	<p>Intel® Virtual RAID on CPU (Intel® VROC) – Standard Model Key</p> <table><tr><td>iPC</td><td>VROCSTANMOD</td></tr><tr><td>MM#</td><td>951605</td></tr><tr><td>UPC</td><td>00735858337243</td></tr><tr><td>EAN</td><td>5032037100007</td></tr><tr><td>MOQ</td><td>5</td></tr></table> <p>Product type Accessory kit</p>	iPC	VROCSTANMOD	MM#	951605	UPC	00735858337243	EAN	5032037100007	MOQ	5	Activation key to support Intel and non-Intel NVMe* SSDs and enable RAID (0, 1, 10) functionality.
iPC	VROCSTANMOD											
MM#	951605											
UPC	00735858337243											
EAN	5032037100007											
MOQ	5											
	<p>Intel® Virtual RAID on CPU (Intel® VROC) – Premium Model Key</p> <table><tr><td>iPC</td><td>VROCPREMMOD</td></tr><tr><td>MM#</td><td>951606</td></tr><tr><td>UPC</td><td>00735858337267</td></tr><tr><td>EAN</td><td>5032037100014</td></tr><tr><td>MOQ</td><td>5</td></tr></table> <p>Product type Accessory kit</p>	iPC	VROCPREMMOD	MM#	951606	UPC	00735858337267	EAN	5032037100014	MOQ	5	Activation key to support Intel and non-Intel NVMe* SSDs and enable RAID (0, 1, 5, 10) functionality.
iPC	VROCPREMMOD											
MM#	951606											
UPC	00735858337267											
EAN	5032037100014											
MOQ	5											
	<p>Intel® Trusted Platform Module (TPM) 2.0</p> <table><tr><td>iPC</td><td>AXXTPMENC8</td></tr><tr><td>MM#</td><td>955867</td></tr><tr><td>UPC</td><td>00735858345712</td></tr><tr><td>EAN</td><td>5032037106207</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Accessory kit</p>	iPC	AXXTPMENC8	MM#	955867	UPC	00735858345712	EAN	5032037106207	MOQ	1	<p>A TPM is a hardware-based security device that addresses the growing concern on boot process integrity and offers better data protection. TPM protects the system start-up process by ensuring it is tamper-free before releasing system control to the operating system. A TPM device provides secured storage to store data, such as security keys and passwords. In addition, a TPM device has encryption and hash functions.</p> <p>AXXTPMENC8 implements TPM as per TPM PC Client specifications revision 2.0 by the Trusted Computing Group (TCG)</p>
iPC	AXXTPMENC8											
MM#	955867											
UPC	00735858345712											
EAN	5032037106207											
MOQ	1											

Image	Details	Description	
	Intel® Trusted Platform Module (TPM) 2.0		
	iPC	AXXTPMCHNE8	Note: AXXTPMCHNE8 compatible for use in China. A TPM is a hardware-based security device that addresses the growing concern on boot process integrity and offers better data protection. TPM protects the system start-up process by ensuring it is tamper-free before releasing system control to the operating system. A TPM device provides secured storage to store data, such as security keys and passwords. In addition, a TPM device has encryption and hash functions. AXXTPMCHNE8 implements TPM as per TPM PC Client specifications revision 2.0 by the Trusted Computing Group (TCG)
	MM#	960608	
	UPC	00735858347341	
	EAN	5032037107068	
	MOQ	1	
Product type Accessory kit			
	Advanced System Management Key		
	iPC	ADVSYSMGMTKEY	Software electronic key to be uploaded to the BMC Note: Needed to enable advance system management features on Integrated BMC Web Console. For more information, see the <i>Intel® Server D50TNP Family Technical Product Specification</i> .
	MM#	99AJX5	
	UPC	N/A	
	EAN	N/A	
	MOQ	1	
Product type Accessory kit			

4. Spare and Replacement Parts (FRUs)

System integrators and distributors may choose to hold additional stock of individual system components. Intel makes available the following spare and replacement parts (FRUs) compatible with the specified Intel® server family.

Table 21. Spare and Replacement Parts

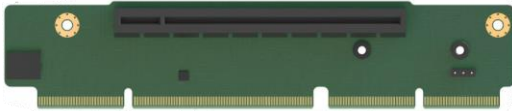
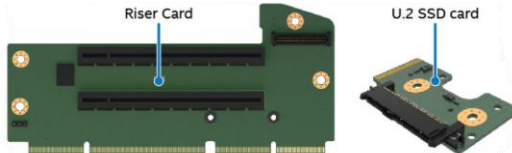
Image	Details	Description										
	<p>1U PCIe* x16 Riser Card for Low-Profile PCIe* Card and M.2 Device</p> <table><tr><td>iPC</td><td>TNP1URISER</td></tr><tr><td>MM#</td><td>99A2GL</td></tr><tr><td>UPC</td><td>00735858469449</td></tr><tr><td>EAN</td><td>5032037208017</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNP1URISER	MM#	99A2GL	UPC	00735858469449	EAN	5032037208017	MOQ	1	<p>Riser card option to be used on the following modules:</p> <ul style="list-style-type: none">• Compute Module 1U Half-Width Air-Cooled• Storage Module 2U Half-Width Air-Cooled <p>Support for one low-profile PCIe* add-in card on the right side and one SATA/PCIe* 80/110 mm M.2 device on the left side.</p> <p>Kit includes:</p> <p>(1) – Riser card</p> <p>(1) – M.2 standoff and screw</p>
iPC	TNP1URISER											
MM#	99A2GL											
UPC	00735858469449											
EAN	5032037208017											
MOQ	1											
	<p>2U PCIe* x16 Riser Card for Low-Profile PCIe* Card and M.2 Device</p> <table><tr><td>iPC</td><td>TNP2URISER</td></tr><tr><td>MM#</td><td>99A2GM</td></tr><tr><td>UPC</td><td>00735858469456</td></tr><tr><td>EAN</td><td>5032037208024</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNP2URISER	MM#	99A2GM	UPC	00735858469456	EAN	5032037208024	MOQ	1	<p>Riser card option to be used on the following modules:</p> <ul style="list-style-type: none">• Management Module 2U Half-Width Air-Cooled• Accelerator Module 2U Full-Width Air-Cooled. <p>Support for (2) low-profile PCIe* add-in cards and (1) U.2 PCIe NVMe* SSD on the right side, and one SATA/PCIe* 80/110 mm M.2 device on the left side.</p> <p>Kit includes:</p> <p>(1) – 2U riser card</p> <p>(1) – U.2 PCIe* NVMe* SSD adapter card</p> <p>(1) – M.2 standoff and screw</p>
iPC	TNP2URISER											
MM#	99A2GM											
UPC	00735858469456											
EAN	5032037208024											
MOQ	1											


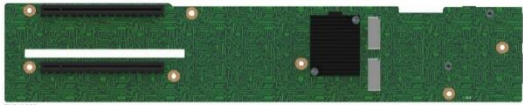

Image	Details	Description										
	<p>1U PCIe* x16 Riser Card for Low-Profile PCIe* Card and M.2 Device.</p> <table><tr><td>iPC</td><td>TNP1UCRRISER</td></tr><tr><td>MM#</td><td>99AF4H</td></tr><tr><td>UPC</td><td>00735858476270</td></tr><tr><td>EAN</td><td>5032037214155</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNP1UCRRISER	MM#	99AF4H	UPC	00735858476270	EAN	5032037214155	MOQ	1	<p>Riser card option to be used on the following modules:</p> <ul style="list-style-type: none">• Compute Module 1U Half-Width Air-Cooled DDR4 Only• Compute Module 1U Half-Width EVAC Air-Cooled DDR4 Only• Compute Module 1U Half-Width Liquid-Cooled DDR4 Only. <p>Support for one low-profile PCIe* add-in card on the right side and one SATA/PCIe* 80/110 mm M.2 device on the left side.</p> <p>Kit includes:</p> <p>(1) –Riser card</p> <p>(1) – M.2 standoff and screw</p>
iPC	TNP1UCRRISER											
MM#	99AF4H											
UPC	00735858476270											
EAN	5032037214155											
MOQ	1											
	<p>Accelerator Module Riser Card 1</p> <table><tr><td>iPC</td><td>TNPACCLRISER1</td></tr><tr><td>MM#</td><td>99A2GK</td></tr><tr><td>UPC</td><td>00735858469463</td></tr><tr><td>EAN</td><td>5032037208031</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNPACCLRISER1	MM#	99A2GK	UPC	00735858469463	EAN	5032037208031	MOQ	1	<p>Riser card option for Accelerator Module 2U Full-Width Air-Cooled.</p> <p>Support for (2) full height, full length, double width PCIe* add-in cards for acceleration solutions.</p> <p>Kit includes:</p> <p>(1) – Accelerator Module Riser Card 1</p>
iPC	TNPACCLRISER1											
MM#	99A2GK											
UPC	00735858469463											
EAN	5032037208031											
MOQ	1											
	<p>Accelerator Module Riser Card 2</p> <table><tr><td>iPC</td><td>TNPACCLRISER2</td></tr><tr><td>MM#</td><td>99A2GN</td></tr><tr><td>UPC</td><td>00735858469470</td></tr><tr><td>EAN</td><td>5032037208048</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNPACCLRISER2	MM#	99A2GN	UPC	00735858469470	EAN	5032037208048	MOQ	1	<p>Riser card option for Accelerator Module 2U Full-Width Air-Cooled.</p> <p>Support for (2) full height, full length, double width PCIe* add-in cards for acceleration solutions.</p> <p>Kit includes:</p> <p>(1) – Accelerator Module Riser Card 2</p>
iPC	TNPACCLRISER2											
MM#	99A2GN											
UPC	00735858469470											
EAN	5032037208048											
MOQ	1											

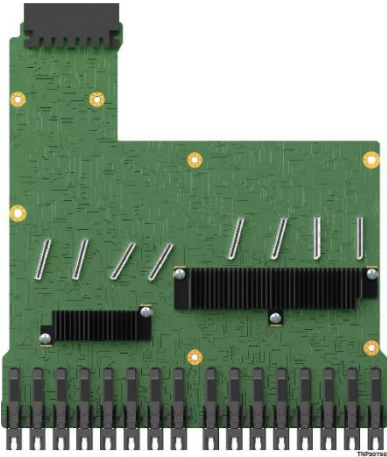
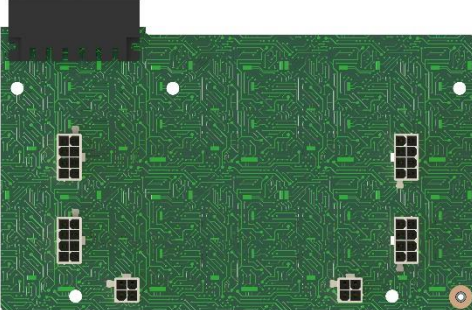

Image	Details	Description										
 <p>TNP41180</p>	<p>Storage Module Docking Board</p> <table><tr><td>iPC</td><td>TNPSTDCKBRD</td></tr><tr><td>MM#</td><td>99A2F7</td></tr><tr><td>UPC</td><td>00735858469487</td></tr><tr><td>EAN</td><td>5032037208055</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNPSTDCKBRD	MM#	99A2F7	UPC	00735858469487	EAN	5032037208055	MOQ	1	<p>Docking board for Storage Module 2U Half-Width Air-Cooled.</p> <p>Note: Heat sinks shown on the image are included but not installed on the docking board.</p>
iPC	TNPSTDCKBRD											
MM#	99A2F7											
UPC	00735858469487											
EAN	5032037208055											
MOQ	1											
 <p>TNP41181</p>	<p>Accelerator Module Connector Board</p> <table><tr><td>iPC</td><td>TNPACCLCNBRD</td></tr><tr><td>MM#</td><td>99A2F8</td></tr><tr><td>UPC</td><td>00735858469494</td></tr><tr><td>EAN</td><td>5032037208062</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNPACCLCNBRD	MM#	99A2F8	UPC	00735858469494	EAN	5032037208062	MOQ	1	<p>Power connector board for Accelerator Module 2U Full-Width Air-Cooled.</p>
iPC	TNPACCLCNBRD											
MM#	99A2F8											
UPC	00735858469494											
EAN	5032037208062											
MOQ	1											
 <p>TNP41180</p>	<p>1U Air-Cooled Heat Sink Front</p> <table><tr><td>iPC</td><td>TNP1UHSF</td></tr><tr><td>MM#</td><td>99A2F9</td></tr><tr><td>UPC</td><td>00735858469500</td></tr><tr><td>EAN</td><td>5032037208079</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNP1UHSF	MM#	99A2F9	UPC	00735858469500	EAN	5032037208079	MOQ	1	<p>Standard heat sink, front position.</p> <p>To be used on the following modules:</p> <ul style="list-style-type: none">• Compute Module 1U Half-Width Air-Cooled• Compute Module 1U Half-Width Air-Cooled DDR4 Only• Storage Module 2U Half-Width Air-Cooled
iPC	TNP1UHSF											
MM#	99A2F9											
UPC	00735858469500											
EAN	5032037208079											
MOQ	1											

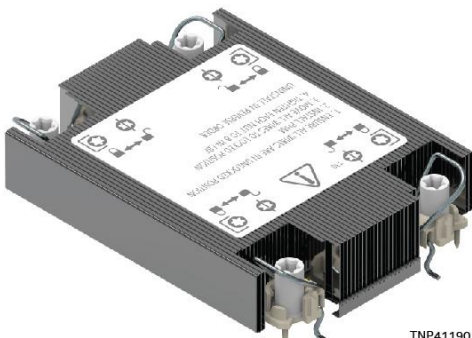


Image	Details	Description										
 <p>TNP41190</p>	<p>1U Air-Cooled Heat Sink Rear</p> <table><tr><td>iPC</td><td>TNP1UHSB</td></tr><tr><td>MM#</td><td>99A2FA</td></tr><tr><td>UPC</td><td>00735858469517</td></tr><tr><td>EAN</td><td>5032037208086</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNP1UHSB	MM#	99A2FA	UPC	00735858469517	EAN	5032037208086	MOQ	1	<p>Standard heat sink, rear position.</p> <p>To be used on the following modules:</p> <ul style="list-style-type: none">• Compute Module 1U Half-Width Air-Cooled• Compute Module 1U Half-Width Air-Cooled DDR4 Only• Compute Module 1U Half-Width EVAC Air-Cooled DDR4 Only• Storage Module 2U Half-Width Air-Cooled
iPC	TNP1UHSB											
MM#	99A2FA											
UPC	00735858469517											
EAN	5032037208086											
MOQ	1											
 <p>TNP41160</p>	<p>2U Air-Cooled Heat Sink Front</p> <table><tr><td>iPC</td><td>TNP2UHSF</td></tr><tr><td>MM#</td><td>99A27K</td></tr><tr><td>UPC</td><td>00735858469524</td></tr><tr><td>EAN</td><td>5032037208093</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNP2UHSF	MM#	99A27K	UPC	00735858469524	EAN	5032037208093	MOQ	1	<p>Standard heat sink, front position.</p> <p>To be used on the following modules:</p> <ul style="list-style-type: none">• Management Module 2U Half-Width Air-Cooled• Accelerator Module 2U Full-Width Air-Cooled
iPC	TNP2UHSF											
MM#	99A27K											
UPC	00735858469524											
EAN	5032037208093											
MOQ	1											
 <p>TNP41170</p>	<p>2U Air-Cooled Heat Sink Rear</p> <table><tr><td>iPC</td><td>TNP2UHSB</td></tr><tr><td>MM#</td><td>99A2F5</td></tr><tr><td>UPC</td><td>00735858469531</td></tr><tr><td>EAN</td><td>5032037208109</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNP2UHSB	MM#	99A2F5	UPC	00735858469531	EAN	5032037208109	MOQ	1	<p>Standard heat sink, rear position.</p> <p>To be used on the following modules:</p> <ul style="list-style-type: none">• Management Module 2U Half-Width Air-Cooled• Accelerator Module 2U Full-Width Air-Cooled
iPC	TNP2UHSB											
MM#	99A2F5											
UPC	00735858469531											
EAN	5032037208109											
MOQ	1											

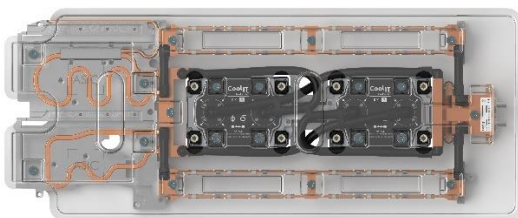


Image	Details	Description										
 <small>Ref ID: TNP40100</small>	<p>Compute Module Primary Liquid-Cooling Loop</p> <table><tr><td>iPC</td><td>TNPLCLPCM</td></tr><tr><td>MM#</td><td>99A2GC</td></tr><tr><td>UPC</td><td>00735858469548</td></tr><tr><td>EAN</td><td>5032037208116</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNPLCLPCM	MM#	99A2GC	UPC	00735858469548	EAN	5032037208116	MOQ	1	<p>Liquid Cooling loop spare kit for 1U liquid-cooled modules</p> <p>Kit includes:</p> <p>(1) – liquid cooling loop with plastic carrier for installation/removal</p> <p>(2) – Front voltage regulator blocks</p> <p>(8) – DIMM retention clips – iPC FXXWKLCDMCLP</p>
iPC	TNPLCLPCM											
MM#	99A2GC											
UPC	00735858469548											
EAN	5032037208116											
MOQ	1											
	<p>M.2 Heat Sink Air Cooled Assembly</p> <table><tr><td>iPC</td><td>TNPM2HS</td></tr><tr><td>MM#</td><td>99A2GA</td></tr><tr><td>UPC</td><td>00735858469579</td></tr><tr><td>EAN</td><td>5032037208147</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNPM2HS	MM#	99A2GA	UPC	00735858469579	EAN	5032037208147	MOQ	1	<p>M.2 heat sink spare kit for air-cooled modules. Compatible with TNP 1U riser, TNP 1U CR riser, and TNP 2U riser</p> <p>Kit includes:</p> <p>(1) – M.2 heat sink and screw</p>
iPC	TNPM2HS											
MM#	99A2GA											
UPC	00735858469579											
EAN	5032037208147											
MOQ	1											
 <small>TNP41300</small>	<p>DIMM Blank</p> <table><tr><td>iPC</td><td>TNPDMMBLNK</td></tr><tr><td>MM#</td><td>99A5ZC</td></tr><tr><td>UPC</td><td>00735858469593</td></tr><tr><td>EAN</td><td>5032037208161</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNPDMMBLNK	MM#	99A5ZC	UPC	00735858469593	EAN	5032037208161	MOQ	1	<p>Compatible with all module options.</p> <p>Kit includes:</p> <p>(8) – Blanks per pack</p> <p>In modules that have defined airflow pattern requirements, it may be necessary to install a DIMM blank when no DIMM is desired within a memory slot that must be populated.</p>
iPC	TNPDMMBLNK											
MM#	99A5ZC											
UPC	00735858469593											
EAN	5032037208161											
MOQ	1											




Image	Details	Description										
 <small>Ref #: TNP4800</small>	<p>Ruler Blank</p> <table><tr><td>iPC</td><td>TNPRLRBLNK</td></tr><tr><td>MM#</td><td>99AF4C</td></tr><tr><td>UPC</td><td>00735858476287</td></tr><tr><td>EAN</td><td>5032037214162</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNPRLRBLNK	MM#	99AF4C	UPC	00735858476287	EAN	5032037214162	MOQ	1	<p>To be used on Storage Module 2U Half-Width Air-Cooled.</p> <p>Kit includes:</p> <p>(4) – Blanks per pack</p>
iPC	TNPRLRBLNK											
MM#	99AF4C											
UPC	00735858476287											
EAN	5032037214162											
MOQ	1											
	<p>Liquid-Cooling DIMM Latch Tool</p> <table><tr><td>iPC</td><td>TNPDMMMLTHTL</td></tr><tr><td>MM#</td><td>99AF4D</td></tr><tr><td>UPC</td><td>00735858476294</td></tr><tr><td>EAN</td><td>5032037214179</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNPDMMMLTHTL	MM#	99AF4D	UPC	00735858476294	EAN	5032037214179	MOQ	1	<p>DIMM latch tool for memory removal on the liquid cooled modules.</p> <p>Kit includes:</p> <p>(2) – Tools</p>
iPC	TNPDMMMLTHTL											
MM#	99AF4D											
UPC	00735858476294											
EAN	5032037214179											
MOQ	1											
 <small>Ref #: TNP4840</small>	<p>1U EVAC Heat Sink</p> <table><tr><td>iPC</td><td>TNPEVACHS</td></tr><tr><td>MM#</td><td>99AFFM</td></tr><tr><td>UPC</td><td>00735858480420</td></tr><tr><td>EAN</td><td>5032037217675</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNPEVACHS	MM#	99AFFM	UPC	00735858480420	EAN	5032037217675	MOQ	1	<p>EVAC heat sink available only for front position.</p> <p>To be used on the following module:</p> <ul style="list-style-type: none">• Compute Module 1U Half-Width EVAC Air-Cooled DDR4 Only
iPC	TNPEVACHS											
MM#	99AFFM											
UPC	00735858480420											
EAN	5032037217675											
MOQ	1											

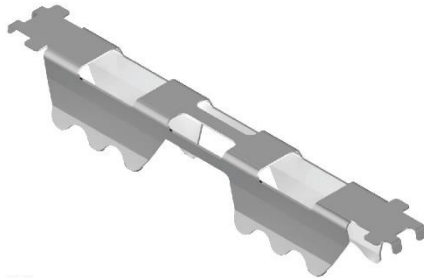
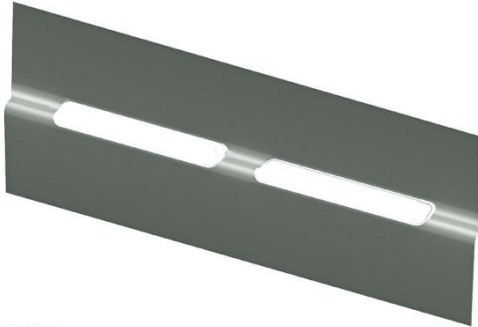

Image	Details	Description										
 <small>10N4310</small>	<p>DIMM Retention Clip</p> <table><tr><td>iPC</td><td>FXXWKLCDMCLP</td></tr><tr><td>MM#</td><td>999D46</td></tr><tr><td>UPC</td><td>00735858426060</td></tr><tr><td>EAN</td><td>5032037168267</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	FXXWKLCDMCLP	MM#	999D46	UPC	00735858426060	EAN	5032037168267	MOQ	1	<p>DIMM retention clip spare kit for use with liquid cooled modules.</p> <p>Kit includes:</p> <p>(4) – clips.</p>
iPC	FXXWKLCDMCLP											
MM#	999D46											
UPC	00735858426060											
EAN	5032037168267											
MOQ	1											
 <small>WKP4910</small>	<p>Thermal Interface Material Spare Kit for Liquid Cooling Loop</p> <table><tr><td>iPC</td><td>TNPLCDMTM</td></tr><tr><td>MM#</td><td>99AFM7</td></tr><tr><td>UPC</td><td>00735858479226</td></tr><tr><td>EAN</td><td>5032037216562</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	TNPLCDMTM	MM#	99AFM7	UPC	00735858479226	EAN	5032037216562	MOQ	1	<p>Thermal interface material spare kit. To be installed in memory cooling assemblies in the liquid cooling loop.</p> <p>Kit includes:</p> <p>(4) – Pieces of TIM material.</p>
iPC	TNPLCDMTM											
MM#	99AFM7											
UPC	00735858479226											
EAN	5032037216562											
MOQ	1											
 <small>WKP4050</small>	<p>2100 W Common Redundant Power Supply</p> <table><tr><td>iPC</td><td>FCXX2100CRPS</td></tr><tr><td>MM#</td><td>999D4L</td></tr><tr><td>UPC</td><td>00735858424592</td></tr><tr><td>EAN</td><td>5032037166829</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	FCXX2100CRPS	MM#	999D4L	UPC	00735858424592	EAN	5032037166829	MOQ	1	<p>2100 W AC common redundant power supply, 80 PLUS* Platinum efficiency.</p>
iPC	FCXX2100CRPS											
MM#	999D4L											
UPC	00735858424592											
EAN	5032037166829											
MOQ	1											


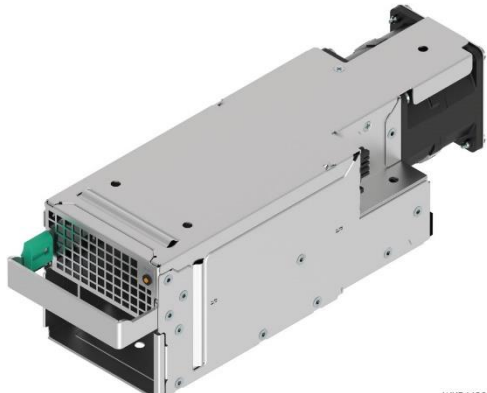

Image	Details	Description										
 <small>WKP4050</small>	<p>1600 W Common Redundant Power Supply</p> <table><tr><td>iPC</td><td>AXX1600TCRPS</td></tr><tr><td>MM#</td><td>99ADF2</td></tr><tr><td>UPC</td><td>00735858407038</td></tr><tr><td>EAN</td><td>5032037151245</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	AXX1600TCRPS	MM#	99ADF2	UPC	00735858407038	EAN	5032037151245	MOQ	1	1600 W AC common redundant power supply, 80 PLUS* Titanium efficiency.
iPC	AXX1600TCRPS											
MM#	99ADF2											
UPC	00735858407038											
EAN	5032037151245											
MOQ	1											
 <small>WKP4430</small>	<p>Spare Fan Assembly with Integrated Dual Rotor 60 mm Fan</p> <table><tr><td>iPC</td><td>FCXX60MMFAN</td></tr><tr><td>MM#</td><td>999D4A</td></tr><tr><td>UPC</td><td>00735858426015</td></tr><tr><td>EAN</td><td>5032037168212</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	FCXX60MMFAN	MM#	999D4A	UPC	00735858426015	EAN	5032037168212	MOQ	1	Fan assembly with integrated dual rotor 60 mm fan.
iPC	FCXX60MMFAN											
MM#	999D4A											
UPC	00735858426015											
EAN	5032037168212											
MOQ	1											
 <small>WKP4740</small>	<p>Spare Fan Assembly with Integrated Dual Rotor 80 mm Fan</p> <table><tr><td>iPC</td><td>FCXX80MMFAN</td></tr><tr><td>MM#</td><td>999D4C</td></tr><tr><td>UPC</td><td>00735858426022</td></tr><tr><td>EAN</td><td>5032037168229</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	FCXX80MMFAN	MM#	999D4C	UPC	00735858426022	EAN	5032037168229	MOQ	1	Fan assembly with integrated dual rotor 80 mm fan.
iPC	FCXX80MMFAN											
MM#	999D4C											
UPC	00735858426022											
EAN	5032037168229											
MOQ	1											


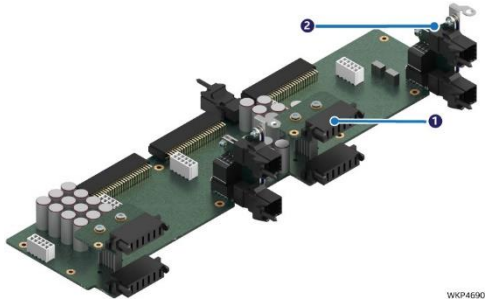
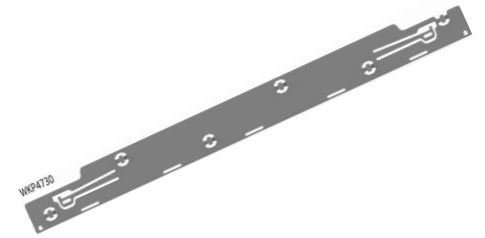


Image	Details	Description										
 <small>WKP4750</small>	<p>Chassis Plumbing Connections Spare Kit</p> <table><tr><td>iPC</td><td>FCXXLCMANFLD</td></tr><tr><td>MM#</td><td>999D4F</td></tr><tr><td>UPC</td><td>00735858426039</td></tr><tr><td>EAN</td><td>5032037168236</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	FCXXLCMANFLD	MM#	999D4F	UPC	00735858426039	EAN	5032037168236	MOQ	1	<p>Chassis plumbing connections spare kit. The plumbing connections include two Staubli* SCG 06 quick connect couplings.</p> <p>Note: The kit is pre charged with liquid coolant.</p>
iPC	FCXXLCMANFLD											
MM#	999D4F											
UPC	00735858426039											
EAN	5032037168236											
MOQ	1											
 <small>WKP4690</small>	<p>Power Distribution Board Assembly</p> <table><tr><td>iPC</td><td>FCXXPDBASSMBL</td></tr><tr><td>MM#</td><td>999D4G</td></tr><tr><td>UPC</td><td>00735858424745</td></tr><tr><td>EAN</td><td>5032037166973</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	FCXXPDBASSMBL	MM#	999D4G	UPC	00735858424745	EAN	5032037166973	MOQ	1	<p>Power distribution board assembly spare kit.</p> <p>Kit includes:</p> <p>(1) – Power distribution board</p> <p>(2) – Power mezzanine boards – (No. 1)</p> <p>(2) – Management risers – (No. 2)</p> <p>Power distribution board spare can be used only on the following chassis:</p> <ul style="list-style-type: none">• Intel® Server Chassis FC2000 Half-Width Configuration Liquid-Cooled (2100W)• Intel® Server Chassis FC2000 Half-Width Configuration Air-Cooled (2100W)• Intel® Server Chassis FC2000 Half-Width Configuration Air-Cooled (1600W)
iPC	FCXXPDBASSMBL											
MM#	999D4G											
UPC	00735858424745											
EAN	5032037166973											
MOQ	1											
 <small>WKP4750</small>	<p>Internal Rail Spare Kit</p> <table><tr><td>iPC</td><td>FCXX1USPPRT</td></tr><tr><td>MM#</td><td>999D4H</td></tr><tr><td>UPC</td><td>00735858426053</td></tr><tr><td>EAN</td><td>5032037168250</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	FCXX1USPPRT	MM#	999D4H	UPC	00735858426053	EAN	5032037168250	MOQ	1	<p>Internal Rail spare kit for 1U compute modules.</p> <p>Kit includes:</p> <p>(4) – Rails.</p>
iPC	FCXX1USPPRT											
MM#	999D4H											
UPC	00735858426053											
EAN	5032037168250											
MOQ	1											

Image	Details	Description										
	<p>Fixed Rail Kit</p> <table><tr><td>iPC</td><td>FCXXRAILKIT</td></tr><tr><td>MM#</td><td>999D4J</td></tr><tr><td>UPC</td><td>00735858425971</td></tr><tr><td>EAN</td><td>5032037168175</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	FCXXRAILKIT	MM#	999D4J	UPC	00735858425971	EAN	5032037168175	MOQ	1	<p>Maximum supported weight: 330 lbs. (150kg)</p> <p>Tool-less chassis attach</p>
iPC	FCXXRAILKIT											
MM#	999D4J											
UPC	00735858425971											
EAN	5032037168175											
MOQ	1											
	<p>Spare North America Power Cable</p> <table><tr><td>iPC</td><td>FPWRCABLENA</td></tr><tr><td>MM#</td><td>879287</td></tr><tr><td>UPC</td><td>00735858181129</td></tr><tr><td>EAN</td><td>503203702015738</td></tr><tr><td>MOQ</td><td>1</td></tr></table> <p>Product type Spare FRU</p>	iPC	FPWRCABLENA	MM#	879287	UPC	00735858181129	EAN	503203702015738	MOQ	1	<p>Spare North America power cord</p>
iPC	FPWRCABLENA											
MM#	879287											
UPC	00735858181129											
EAN	503203702015738											
MOQ	1											

Appendix A. Glossary

Term	Definition
Intel® AVX-512	Intel® Advanced Vector Extensions 512
BOM	Bill of Materials
CRPS	Common Redundant Power Supply
DDR4	Double-Data Rate 4
DIMM	Dual Inline Memory Module
DPC	DIMM per Channel
DR	Double Rank
EAN	International Article Number (Barcode)
ECC	Error Correcting Code
EMP	Ethernet Management Port
FRU	Field Replaceable Unit
iPC	Intel Product Code – used to identify an orderable Intel product
iPN	Intel Part Number – an internal part number issued to a component within a product bill of material (BOM). Individual Intel part numbers are not orderable unless it is included within an orderable Intel product code (iPC)
KVM	Keyboard, Video, Mouse
LRDIMM	Load-Reduced DIMM
MM#	Master Material order number - used to identify an orderable Intel product
MOQ	Minimum Order Quantity
NMI	Non-Maskable Interrupt
NVMe*	NVM Express* – based on Non-Volatile Memory Host Controller Interface Specification (NVMHCI)
Intel® OP HFI	Intel® Omni-Path Host Fabric Interface
OR	Oct Rank
PCIe*	PCI Express

Term	Definition
PMem	Persistent Memory
QR	Quad Rank
RDIMM	Registered DIMM
SMP	Server Management Processor
SSD	Solid State Drive
SR	Single Rank
Intel® UPI	Intel® Ultra Path Interconnect
UPC	Universal Product Code (Barcode)
VNNI	Vector Neural Network Instructions
Intel® VROC	Intel® Virtual RAID on CPU