

CONTACT INFORMATION

- Website: www.supermicro.com
- General Information: marketing@supermicro.com
- Technical Support: support@supermicro.com
- Phone: +1 (408) 503-8000, Fax: +1 (408) 503-8008

FOR YOUR SYSTEM TO WORK PROPERLY, PLEASE DOWNLOAD APPROPRIATE DRIVERS/IMAGES/USER'S MANUAL FROM THE LINKS BELOW:

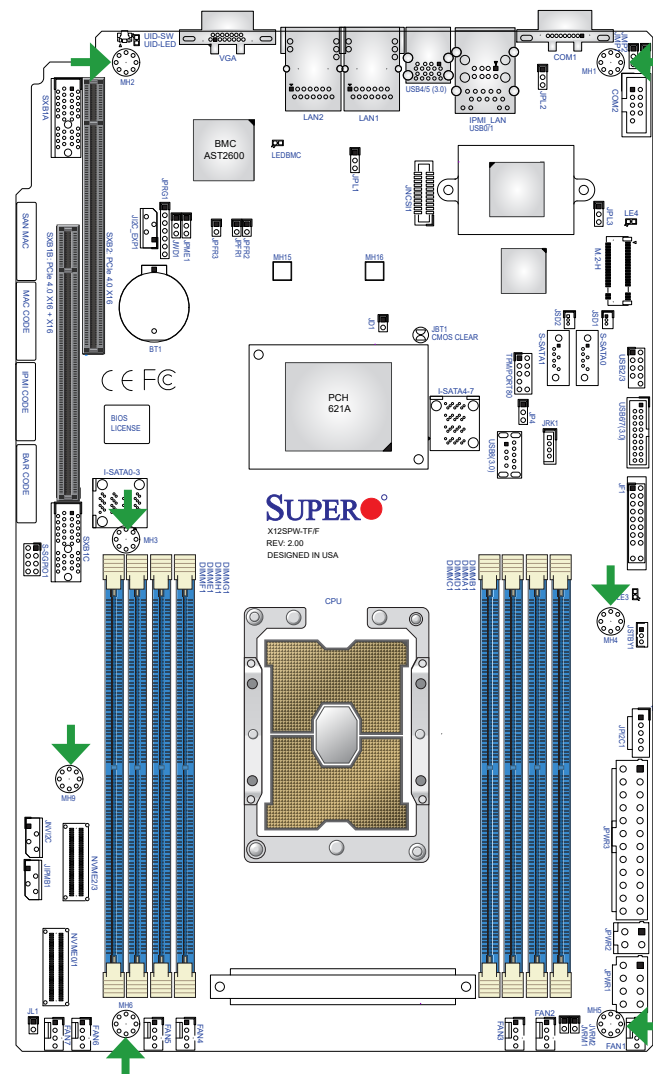
- Manuals: <http://www.supermicro.com/support/manuals>
- Drivers & Utilities: <https://www.supermicro.com/wdl/driver/>
- Safety: http://www.supermicro.com/about/policies/safety_information.cfm

PACKAGE CONTENTS

- One Supermicro Motherboard
- Two SATA Cables
- One Quick Reference Guide

WARNING: This product can expose you to chemicals including lead, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

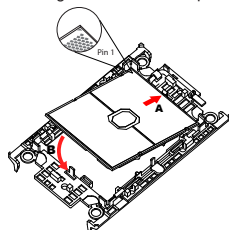
Motherboard Layout and Features



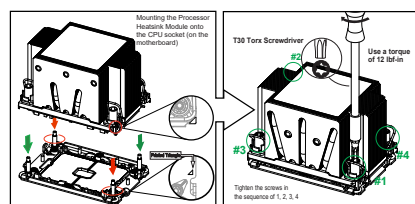
→ = mounting hole

CPU and PHM Installation

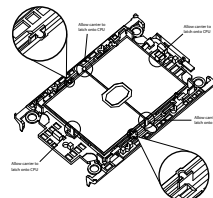
1 Assemble the processor carrier assembly by inserting the CPU into the processor carrier.



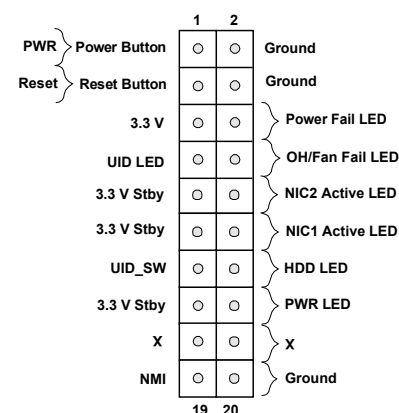
3 After assembling the PHM, mount it onto the CPU socket of the motherboard. Use a T-30 Torx-bit screwdriver to gradually install four screws into the mounting holes from #1-4.



2 To form the processor heatsink module (PHM), mount the processor carrier assembly onto the heatsink and snap into place.



Front Control Panel (JF1)



Connectors and LED Indicators

Jumpers		
Jumper	Description	Default
JBT1	CMOS Clear	Open (Normal)
JPL1	LAN1 Enable/Disable (I210, -F only)	Pins 1-2 (Enabled)
JPL2	LAN2 Enable/Disable (I210, -F only)	Pins 1-2 (Enabled)
JPL3	LAN1/2 Enable/Disable (X550, -TF only)	Pins 1-2 (Enabled)
JPME1	ME Manufacturing Mode	Pins 1-2 (Normal)

Connectors	
Connector	Description
BT1	Onboard CMOS Battery
COM1, COM2	COM Port, COM Header
FAN1 - FAN7	CPU/System Fan Headers
I-SATA0 - I-SATA7	Intel® PCH SATA 3.0 Ports (with RAID 0, 1, 5, 10)
IPMI_LAN	Dedicated IPMI LAN Port
JF1	Front Control Panel Header
J12C_EXP1	4-pin BMC External I²C Header (for internal testing only)
JIPMB1	4-pin BMC External I²C Header
JL1	Chassis Intrusion Header
JNCSI1	NC-SI Header for IPMI Support
JNVI²C	NVMe I²C Header
JPI²C1	Power System Management Bus (SMB) I²C Header
JPWR1	8-pin Power Connector
JPWR2	4-pin Power Connector
JPWR3	24-pin ATX Power Connector
JRK1	Intel RAID Key Header
JSD1, JSD2	SATA DOM Power Connectors
JSTBY1	Standby Power Header
JVRM1, JVRM2	SMBus Clock/DATA header connected to CPU/Mem VRMs
LAN1, LAN2	LAN (RJ45) Ports
M.2-H	M.2 PCIe 3.0 x4 Slot (Supports M-Key 2280 and 22110)
NVME0/1, NVME2/3	PCIe 4.0 x8 Slimline SAS Connector
SXB1A, SXB1B, SXB1C	Supermicro Proprietary WIO Left Add-on Card Slots
SXB2	Supermicro Proprietary WIO Right Add-on Card Slot
S-SATA0, S-SATA1	SATA 3.0 Ports with SATA DOM Power
S-SGPIO1	Serial Link General Purpose I/O Connection Header
TPM	Trusted Platform Module/Port 80 Connector
UID-SW	Unit Identifier (UID) Switch
USB0/1	Back Panel Universal Serial Bus (USB) 2.0 Ports
USB2/3	Front Accessible USB 2.0 Headers
USB4/5 (3.2 Gen 1)	Back Panel USB 3.2 Gen 1 Ports
USB6/7 (3.2 Gen 1)	Front Accessible USB 3.2 Gen 1 Header
USB8 (3.2 Gen 1)	USB 3.2 Gen 1 Type-A Header
VGA	VGA Port

LED Indicators		
LED	Description	Status
LE3	Power LED	Solid Green: Power On
LE4	M.2 HDD LED	Blinking Green: Device Working
LEDBMC	BMC Heartbeat LED	Blinking Green: BMC Normal
UID-LED	Unit Identifier (UID) LED	Solid Blue: Unit Identified

CPU Support

The X12SPW-TF/-F supports the 3rd Generation Intel® Xeon Scalable (Socket P+ (LGA4189)) processors with up to 40 cores and a thermal design power (TDP) of up to 270W.

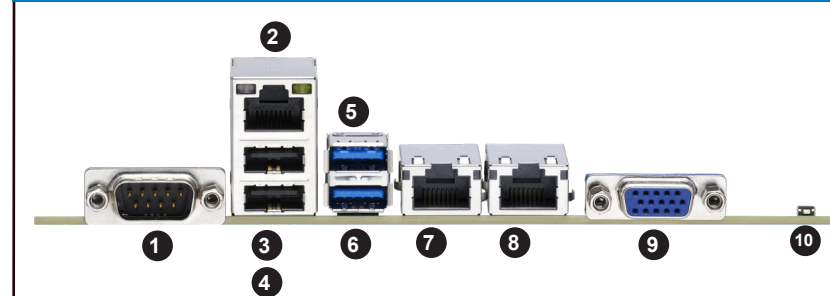
Memory Support and Installation

The X12SPW-TF/-F Supports up to 2048 GB of ECC RDIMM/LRDIMM/LRDIMM (3DS) with speeds of up to 3200 MHz in eight slots See below for additional memory information.

- It's recommended to use DDR4 memory of the same type, size and speed. Mixed DIMM speeds can be installed. However, all DIMMs will run at the speed of the slowest DIMM.
- The motherboard will not support odd-numbered modules except for a single DIMM module necessary for board operation. For more information, refer to https://www.supermicro.com/support/resources/memory/X12_memory_config_guide.pdf.
- To achieve the best memory performance, a balanced memory population is recommended.
- Memory capacity and frequency is CPU dependent.

1 CPU, 8-DIMM Slots	
Number of DIMMs	Memory Population Sequence
1	DIMMA1
2	DIMMA1 / DIMME1
4	DIMMA1 / DIMME1 / DIMMC1 / DIMMG1
6	DIMMA1 / DIMME1 / DIMMC1 / DIMMG1 / DIMMB1 / DIMMF1
8	DIMMA1 / DIMME1 / DIMMC1 / DIMMG1 / DIMMB1 / DIMMF1 / DIMMD1 / DIMMH1

Back Panel I/O Connectors



#	Description	#	Description
1	COM1	6	USB5 (3.2 Gen 1)
2	Dedicated IPMI LAN	7	LAN1
3	USB0	8	LAN2
4	USB1	9	VGA
5	USB4 (3.2 Gen 1)	10	UID Switch

Note: Graphics shown in this quick reference guide are for illustration only. Your components may or may not look exactly the same as drawings shown in this guide.

Note: Refer to Chapter 1 of the User Manual for detailed information on jumpers, connectors, and LED indicators.

Note: Refer to Chapter 2 of the User Manual for detailed information on memory support and CPU/motherboard installation instructions.