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### FOR YOUR SYSTEM TO WORK PROPERLY, PLEASE DOWNLOAD APPROPRIATE

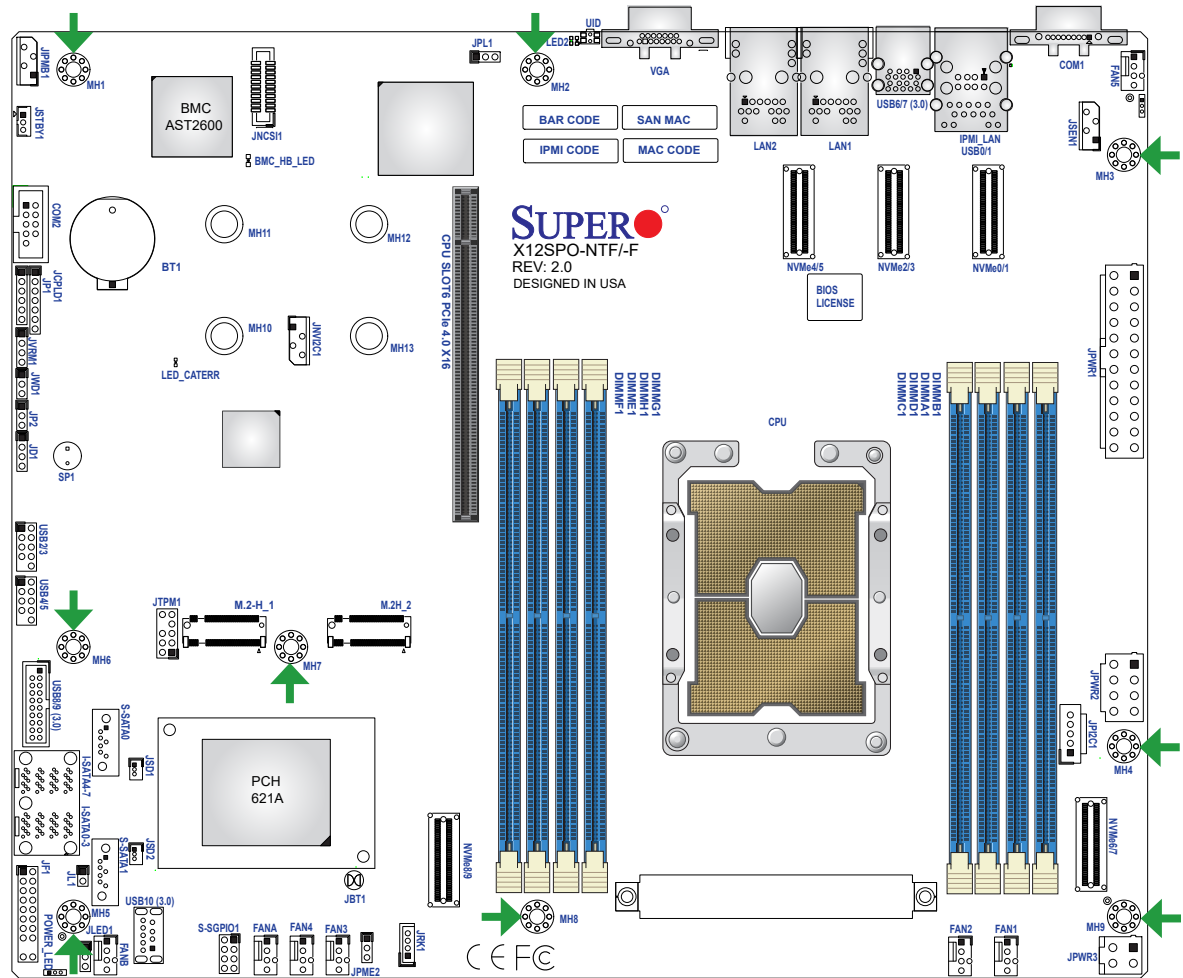
- DRIVERS/IMAGES/USER'S MANUAL FROM THE LINKS BELOW:
- Manuals: <http://www.supermicro.com/support/manuals>
  - Drivers & Utilities: <https://www.supermicro.com/wd/driver/>
  - Safety: [http://www.supermicro.com/about/policies/safety\\_information.cfm](http://www.supermicro.com/about/policies/safety_information.cfm)

### PACKAGE CONTENTS

- One Supermicro Motherboard
- Two SATA Cables
- One I/O Shield
- One Quick Reference Guide



## Motherboard Layout and Features



→ = mounting hole

## Jumpers and Connectors

Jumpers		
Jumper	Description	Default Setting
JBT1	CMOS Clear	Open (Normal)
JPL1	LAN1/LAN2 Enable	Pins 1-2 (Enabled) Pins 2-3 (Disabled)
JPME2	ME Manufacturing Mode	Pins 1-2 (Normal)
JWD1	Watch Dog Timer	Pins 1-2 (Reset) Pins 2-3 (NMI)

Connectors	
Connector	Description
BT1	Onboard CMOS Battery (To Clear CMOS, remove the battery, short pins 1-2 for more than 10 seconds and install the battery.)
COM1/COM2	COM Port/COM Header
FAN1 - FAN5, FANA, FANB	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
JD1	Power LED/Speaker (Pins 1-4: Speaker)
JF1	Front Control Panel Header
JIPMB1	4-pin BMC External I2C Header (for an IPMI card)
JL1	Chassis Intrusion Header
JNCSI1	NC-SI Header for IPMI Support
JNVI2C1	NVMe I <sup>2</sup> C Header
JPI <sup>2</sup> C1	Power Supply SMBus I <sup>2</sup> C Header
JPWR1	24-pin ATX Power Connector
JPWR2	8-pin Power Connector
JPWR3	4-pin Power Connector
JRK1	Intel RAID Key Header
JSD1, JSD2	SATA DOM Power Connectors
JSEN1	System Front Inlet Temperature Sensor Header
JSTBY1	Standby Power Header
JTPM1	Trusted Platform Module/Port 80 Connector
LAN1, LAN2	LAN 10G/1G Base-T (Intel X550 for 10G [-NTF] or I350 for 1G[-F]) Ports
M.2-H_1, M.2-H_2	M.2 M-Key 2280/22110 (supports PCIe 3.0 x4/SATA3) Slot
NVMe0-NVMe9	PCIe 4.0 x8 Slimline SAS Connectors (NVMe4-9 for -NTF only)
SLOT6	CPU PCIe 4.0 X16 Slot
SP1	Onboard Buzzer
S-SATA0, S-SATA1	SATA 3.0 Ports with SATA DOM Power
S-SGPIO1	Serial Link General Purpose I/O Connection Header
UID	Unit Identifier (UID) Switch
USB0/1	Back Panel Universal Serial Bus (USB) 2.0 Ports
USB2/3, USB4/5	Front Access USB 2.0 Headers
USB6/7	Back Panel USB 3.2 Gen 1 Ports
USB8/9	Front Accessible USB 3.2 Gen 1 Header
USB10	USB 3.2 Gen 1 Type-A Header
VGA	VGA Port

## LED Indicators

LED	Description	Status
BMC_HB_LED	BMC Heartbeat LED	Blinking Green: BMC Normal
LED2	Unit Identifier (UID) LED	Solid Blue: Unit Identified
LED_CATERR	CATERR LED	Solid Orange: System CATERR
POWER_LED	Onboard Power LED	Solid Green: Power On

## CPU Support

The X12SPO-NTF/-F motherboard supports a 3rd generation Intel® Xeon® Scalable Processors (Socket P+ (LGA4189)) processors with up to 40 cores and a thermal design power (TDP) of up to 270 W.

## Memory Support

The X12SPO-NTF/-F Supports up to 2048 GB of ECC RDIMM/LRDIMM/LRDIMM (3DS) with speeds of up to 3200MHz in eight slots. See below for additional memory information.

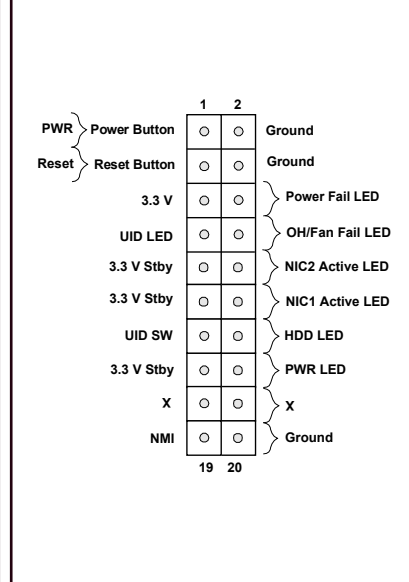
- It's recommended to use DDR4 memory of the same type, size and speed. Mixed DIMM speeds can be installed. However, all DIMMs will run at the speed of the slowest DIMM.
- The motherboard will not support odd-numbered modules except for a single DIMM module necessary for board operation. For more information, refer to [https://www.supermicro.com/support/resources/memory/X12\\_memory\\_config\\_guide.pdf](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

## CPU and PHM Installation

- Assemble the processor carrier assembly by inserting the CPU into the processor carrier.
- To form the processor heatsink module (PHM), mount the processor carrier assembly onto the heatsink and snap into place.
- 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.

## Front Control Panel (JF1)



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 2 of the User Manual for detailed information on jumpers, connectors, and LED indicators.

## Back Panel I/O Connectors

#	Description	#	Description	#	Description	#	Description
1	COM1	4	USB1	7	LAN1	10	UID Switch/BMC Reset
2	IPMI LAN	5	USB6 (3.2 Gen 1)	8	LAN2		
3	USB0	6	USB7 (3.2 Gen 1)	9	VGA		

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