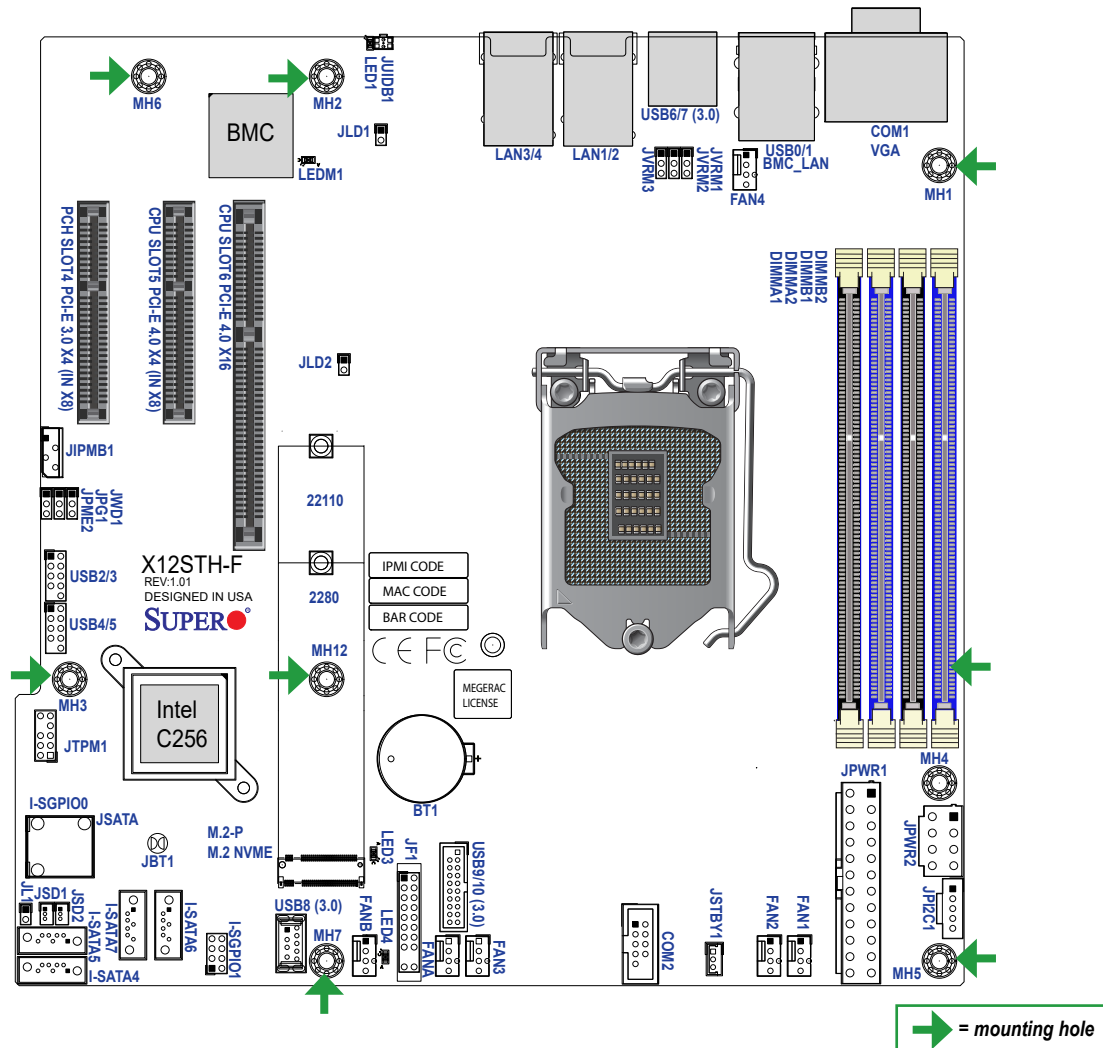


**Motherboard Layout and Features**



**Jumpers and Connectors**

Jumpers		
Jumper	Description	Default Setting
JBT1	CMOS Clear	Open (Normal)
JPG1	VGA Enable/Disable	Pins 1-2 (Enabled)
JPME2	ME Manufacturing Mode	Pins 1-2 (Normal)
JWD1	Watch Dog Timer	Pins 1-2 (Reset)

Connectors	
Connector	Description
BMC_LAN	Dedicated BMC LAN Port
BT1	Onboard Battery
COM1	COM Port
COM2	COM Header
FAN1 - FAN4	CPU/System Fan Headers (FAN1: CPU Fan)

I-SGPI00	Intel® PCH SATA 3.0 Ports (with RAID 0, 1, 5, 10 support)
JSATA (I-SATA0-3)	I-SATA0-3 to JSATA MiniSAS HD (with PCH RAID)
I-SATA4 - I-SATA7	I-SATA4-5 to SATA DOM (with PCH RAID) I-SATA6-7 to SATA (no RAID)

I-SGPI00	Serial General Purpose I/O Headers
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JF1	Front Control Panel Header
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JIPMB1	4-pin BMC External I <sup>2</sup> C Header (for an IPMI card)
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JL1	Chassis Intrusion Header
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JLD1	LAN3 LINK ACTIVITY LED Header (X12STH-LN4F only)
JLD2	LAN4 LINK ACTIVITY LED Header (X12STH-LN4F only)

JPI <sup>2</sup> C1	Power I <sup>2</sup> C System Management Bus (Power SMB) Header
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JPWR1	24-pin ATX Power Connector
JPWR2	8-pin CPU Power Connector

JSD1, JSD2	SATA DOM Power Connectors
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JSTBY1	Standby Power Header
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JTPM1	Trusted Platform Module (TPM)/Port 80 Connector
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JUIDB1	UID Switch
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LAN1-4	1GbE LAN Ports X12STH-F only: LAN1 - LAN2 X12STH-LN4F only: LAN1 - LAN4
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M.2-P, M.2-NVME	M.2 PCIe 3.0 x4 Slot (Supports M-Key 2280 and 22110)
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MH1-7, MH12	Mounting Holes
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SLOT4	PCH PCIe 3.0 x4 (IN x8) Slot
SLOT5	CPU PCIe 4.0 x4 (IN x8) Slot (SLOT5 will be disabled when a Pentium processor is installed)
SLOT6	CPU PCIe 4.0 x16 Slot (SLOT6 will run at PCIe 3.0 x16 when a Pentium processor is installed)

**Connectors and LED Indicators**

Connectors	
Connector	Description
USB2/3, USB4/5	Front Accessible USB 2.0 Headers
USB6/7	Back Panel USB 3.2 Gen 1x1 Ports
USB8	Front Accessible USB 3.2 Gen 1x1 Type A Header
USB9/10	Front Accessible USB 3..2 Gen 1x1 Header
VGA	VGA Port

LED Indicators		
LED	Description	Status
LED1	Unit Identifier (UID) LED	Solid Blue: Unit Identified
LED3	PCIe M.2 Activity LED	Blinking Green: M.2 Active
LED4	Power LED	LED On: Onboard Power On
LEDM1	BMC Heartbeat LED	Blinking Green: Device Working

**CPU Support**

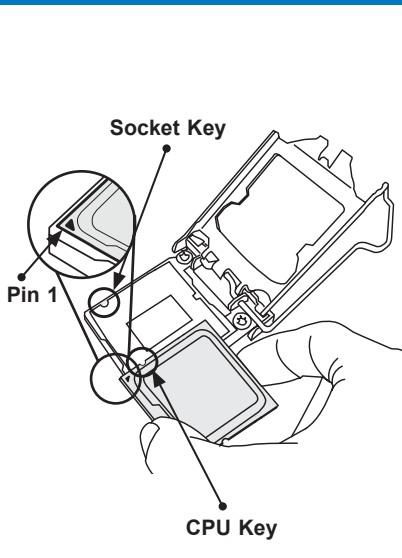
The X12STH-F/LN4F motherboard supports an Intel Xeon E-2300 and 10th Generation Pentium (Socket H5 - LGA 1200) processor with up to eight cores.

**Memory Support**

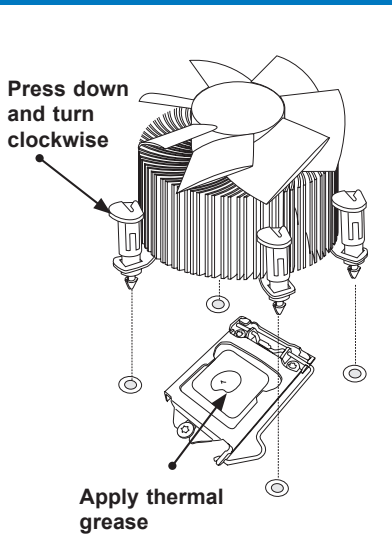
The X12STH-F/LN4F motherboard supports up to 128GB of DDR4 ECC UDIMM meory with speeds of up to 3200MHz in four memory slots.

Speed support is up to 2666MHz when a Pentium processor is installed. Speed support is up to 2933MHz for 2R2R configurations.

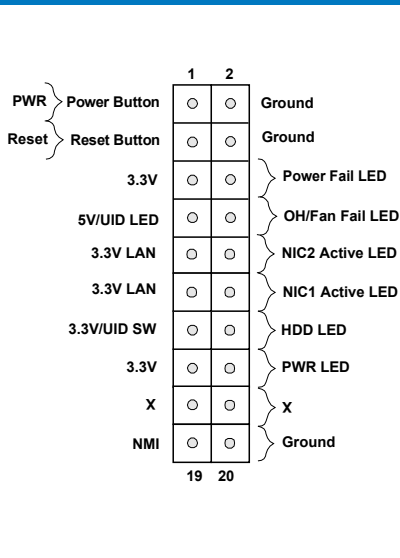
**CPU Installation**



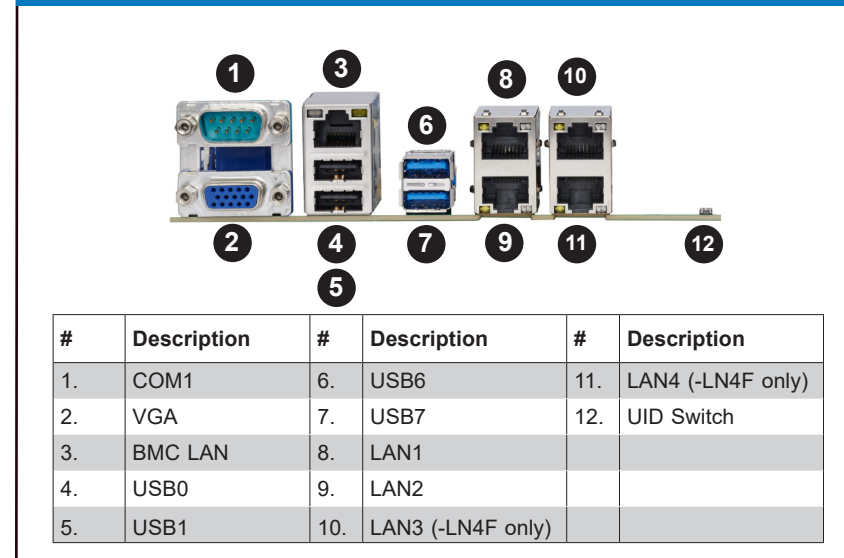
**Heatsink Installation**



**Front Control Panel**



**Back Panel I/O Connectors**



**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.

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