

# COM335

COM Express<sup>®</sup> Carrier Board  
User's Manual

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## Trademarks

Product names or trademarks appearing in this manual are for identification purpose only and are the properties of the respective owners.

## FCC and DOC Statement on Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

## Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables must be used in order to comply with the emission limits.

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## About this Manual

This manual can be downloaded from the website.

The manual is subject to change and update without notice, and may be based on editions that do not resemble your actual products. Please visit our website or contact our sales representatives for the latest editions.

## Warranty

1. Warranty does not cover damages or failures that occur from misuse of the product, inability to use the product, unauthorized replacement or alteration of components and product specifications.
2. The warranty is void if the product has been subjected to physical abuse, improper installation, modification, accidents or unauthorized repair of the product.
3. Unless otherwise instructed in this user's manual, the user may not, under any circumstances, attempt to perform service, adjustments or repairs on the product, whether in or out of warranty. It must be returned to the purchase point, factory or authorized service agency for all such work.
4. We will not be liable for any indirect, special, incidental or consequential damages to the product that has been modified or altered.

## Static Electricity Precautions

It is quite easy to inadvertently damage your PC, system board, components or devices even before installing them in your system unit. Static electrical discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling them to ensure against electrostatic build-up.

1. To prevent electrostatic build-up, leave the system board in its anti-static bag until you are ready to install it.
2. Wear an antistatic wrist strap.
3. Do all preparation work on a static-free surface.
4. Hold the device only by its edges. Be careful not to touch any of the components, contacts or connections.
5. Avoid touching the pins or contacts on all modules and connectors. Hold modules or connectors by their ends.



### Important:

Electrostatic discharge (ESD) can damage your processor, disk drive and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

## Safety Measures

- To avoid damage to the system, use the correct AC input voltage range.
- To reduce the risk of electric shock, unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.

## About the Package

The package contains the following items. If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

- 1 COM335 board
- 1 Serial ATA data cable (Length: 500mm)

The board and accessories in the package may not come similar to the information listed above. This may differ in accordance with the sales region or models in which it was sold. For more information about the standard package in your region, please contact your dealer or sales representative.

## Before Using the System Board

When installing the system board in a new system, you will need at least the following internal components.

- Memory module
- Storage device such as a hard disk drive.
- Power supply

External system peripherals may also be required for navigation and display, including at least a keyboard, a mouse and a video display monitor.

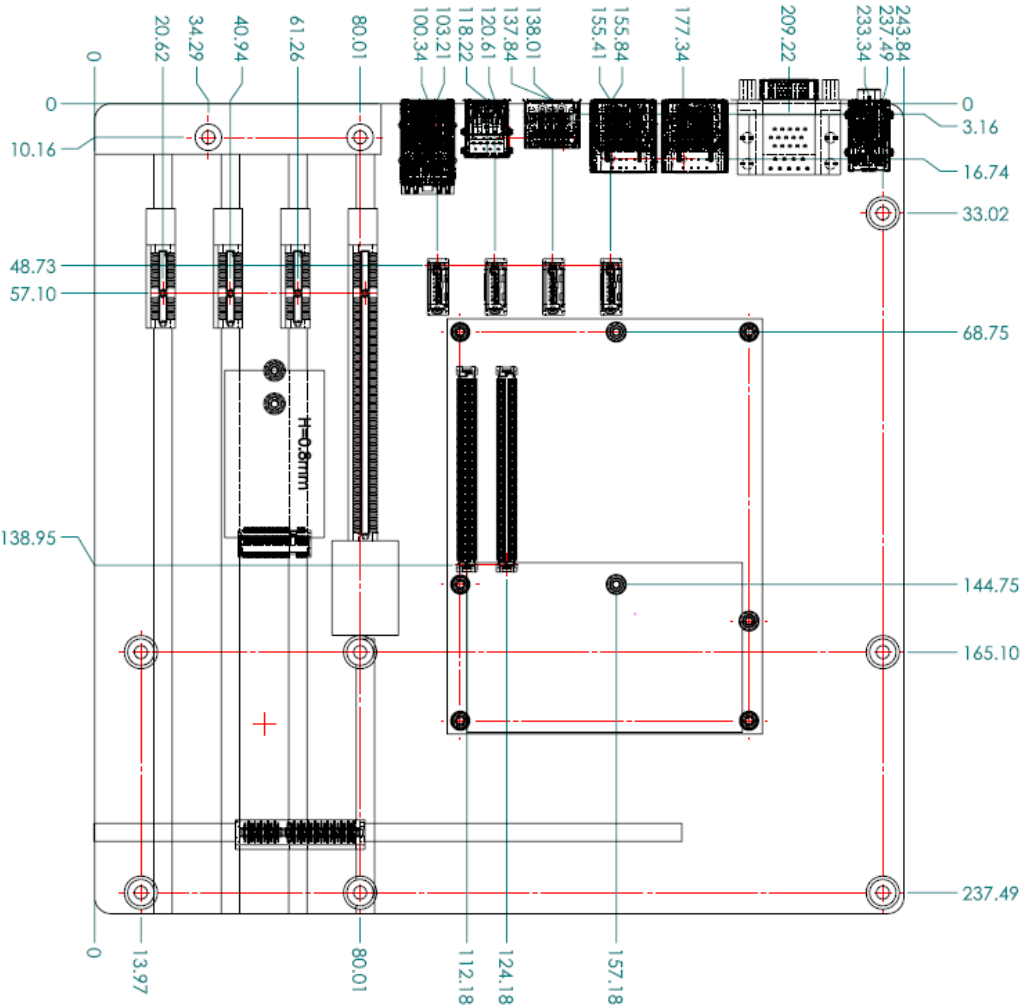
## Chapter 1 - Introduction

## ► Specifications

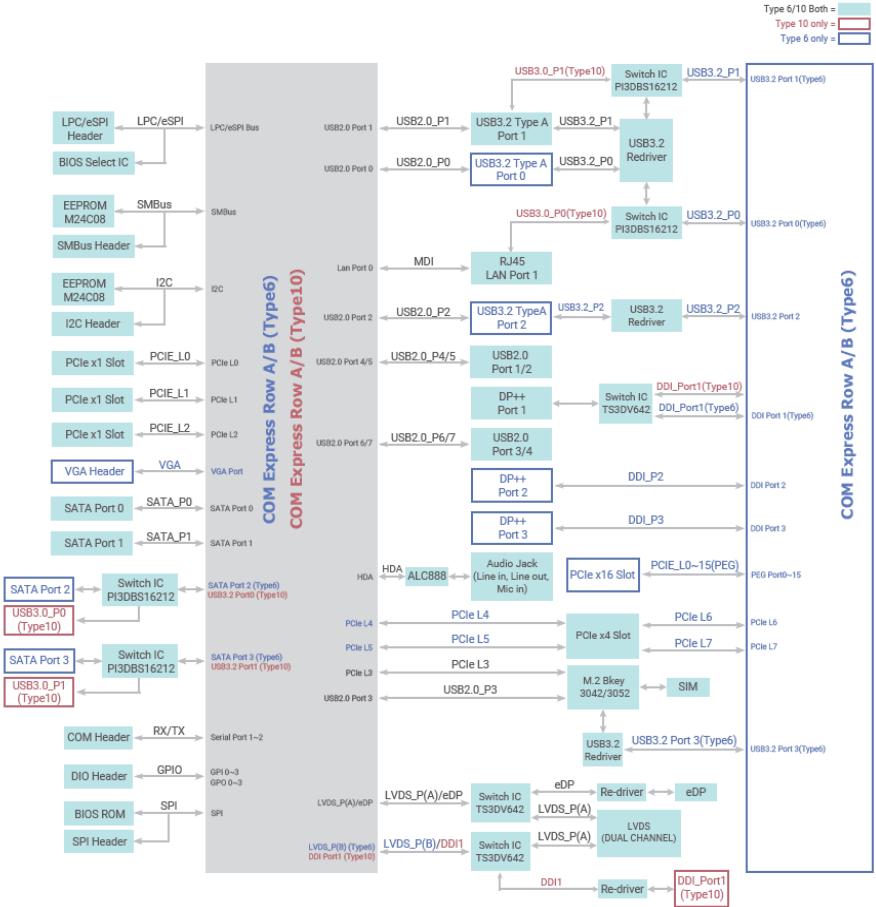
GRAPHICS	Display	1 x VGA 1 x LVDS/eDP (eDP available upon request) 3 x DP 1 x eDP/LVDS (LVDS available upon request)
EXPANSION	Interface	1 x PCIe x16 1 x PCIe x4 3 x PCIe x1 1 x M.2 B Key 3042/3052 1 x SDIO
AUDIO	Audio Codec	Realtek ALC888S-VD2-GR
I/O	Ethernet	1 x GbE (RJ-45)
	USB	3 x USB 3.1 (Gen 2) 4 x USB 2.0
	Display	3 x DP
	Audio	1 x Line-in 1 x Line-out 1 x Mic-in
INTERNAL I/O	Serial	1 x Serial Interface Connector (TX/RX)
	Display	1 x VGA (2.54mm) 1 x LVDS LCD Panel Connector 1 x LCD/Inverter Power 1 x eDP LCD Panel Connector
	Audio	1 x Audio (Line-out/Mic-in) 1 x S/PDIF
	SATA	4 x SATA 3.0 (up to 6Gb/s)
	DIO	1 x 8-bit DIO
	LPC	1 x LPC
	SMBus	1 x SMBus
POWER	Type	12V, 5VSB, VCC_RTC (ATX mode) 12V, VCC_RTC (AT mode)
	Connector	4-pin ATX 12V power 24-pin ATX power
	RTC Battery	CR2032 Coin Cell

ENVIRONMENT	Temperature	Operating: 0 to 60°C Storage: -40 to 85°C
	Humidity	Operating: 5 to 90% RH Storage: 5 to 90% RH
	MTBF	495,767 hrs @ 25C; 284,320 hrs @ 45C; 181,227 hrs @ 60C; 133,598 hrs @ 70C; 84,828 hrs @85C Calculation Model: Telcordia Issue 2, Method Case 3 Environment: GB, GC – Ground Benign, Controlled
MECHANICAL	Dimensions	microATX Form Factor 244mm (9.6") x 244mm (9.6")
	Compliance	PICMG COM Express® R3.1, Type 6 & Type 10 Compact, Mini Module
CERTIFICATIONS	Certifications	CE, FCC, RoHS

► Block Diagram



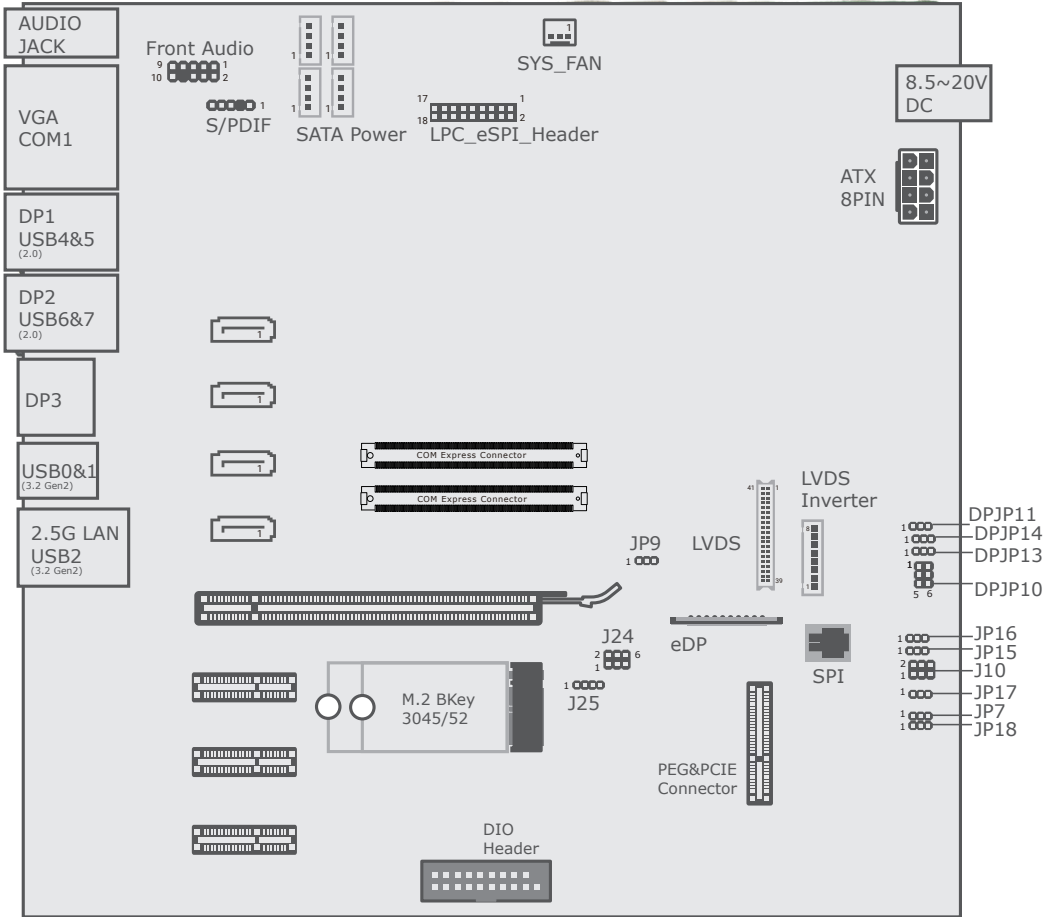
► Dimension





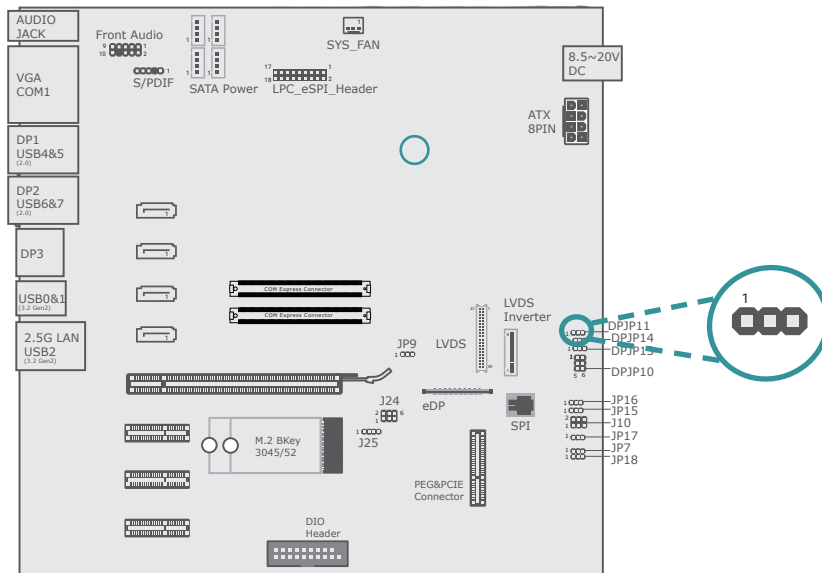
# Chapter 2 - Hardware Installation

## ► Board Layout



► **Jumper Settings**

Panel Inverter Power (DPJP11)

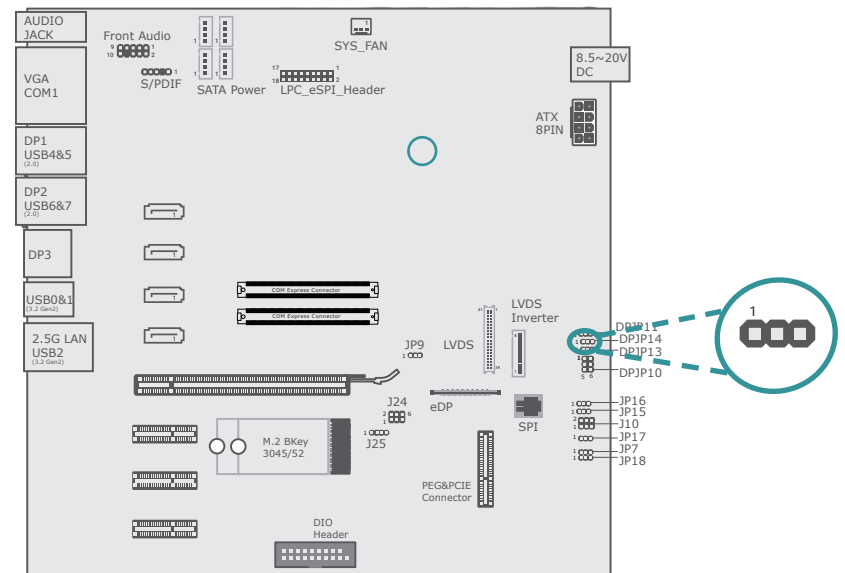


■ 1-2 On: 12V (default)



■ 2-3 On: 5V

DC/PWM Mode (DPJP14)

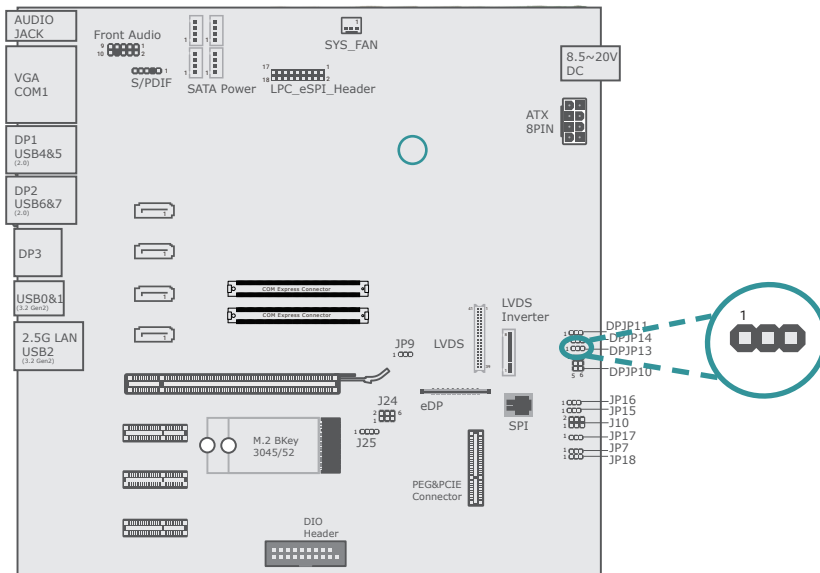


■ 1-2 On: 12V (default)



■ 2-3 On: 5V

### Panel Backlight (DPJP13)

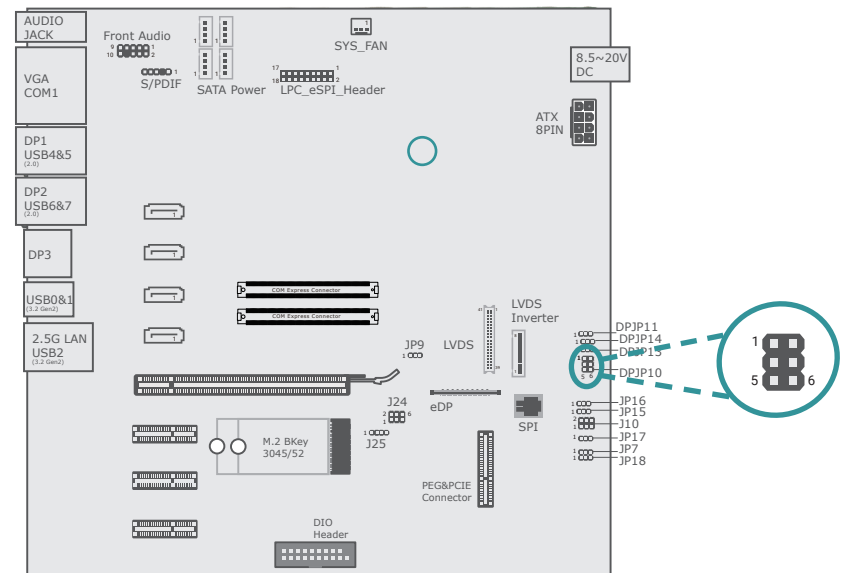


■ 1-2 On: 3V3 (default)

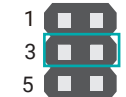


■ 2-3 On: 5V

### Panel Power (DPJP10)



■ 1-2 On: 12V



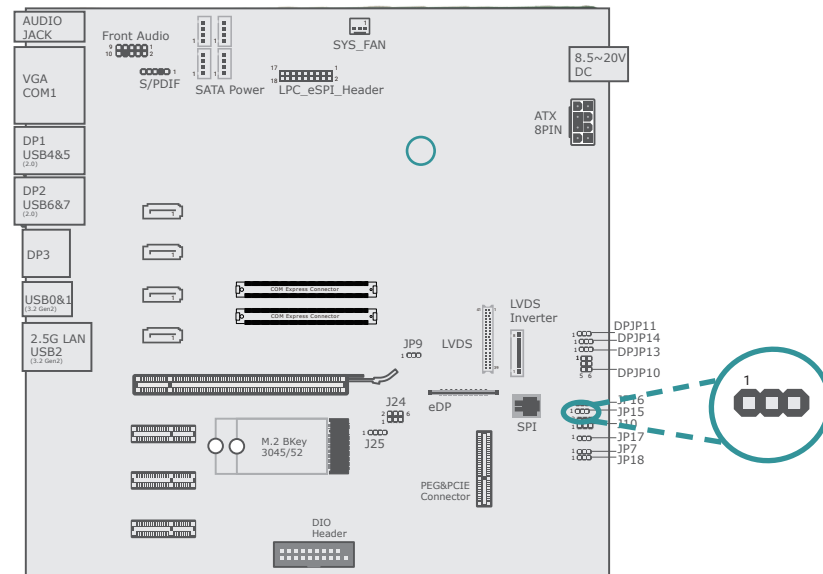
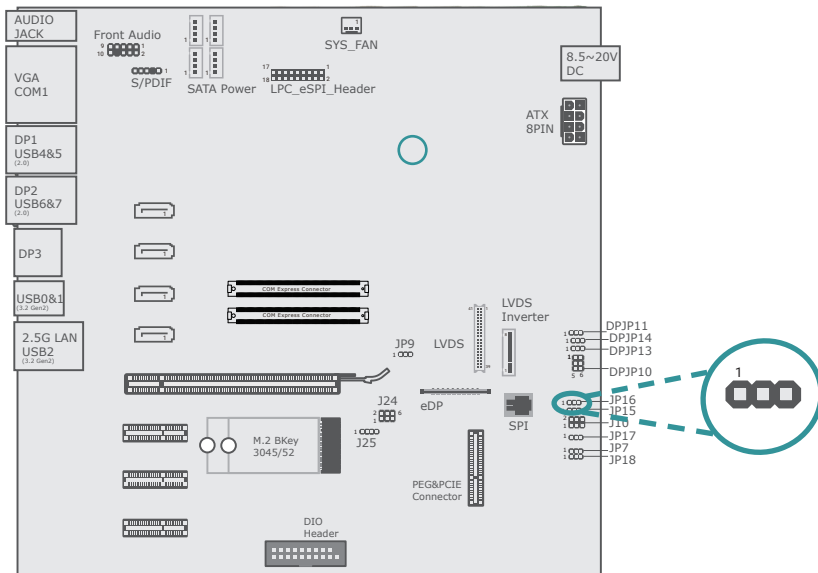
■ 3-4 On: 5V



■ 5-6 On: 3.3V (default)

ATX/AT Mode (JP16)

PWR\_OK Enable (JP15)



■ 1-2 On: ATX (default)



■ 2-3 On: AT

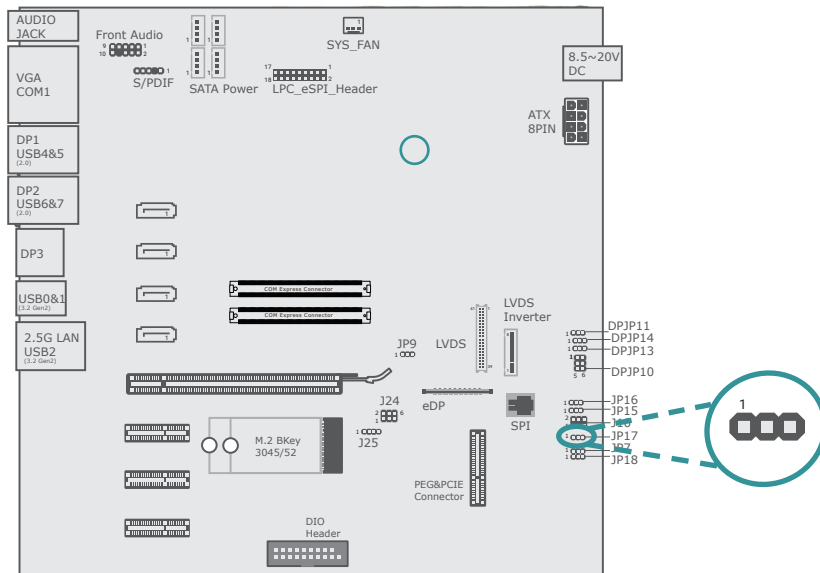


■ 1-2 On: ATX (default)



■ 2-3 On: AT

COMe Type6&Type10 (JP17)

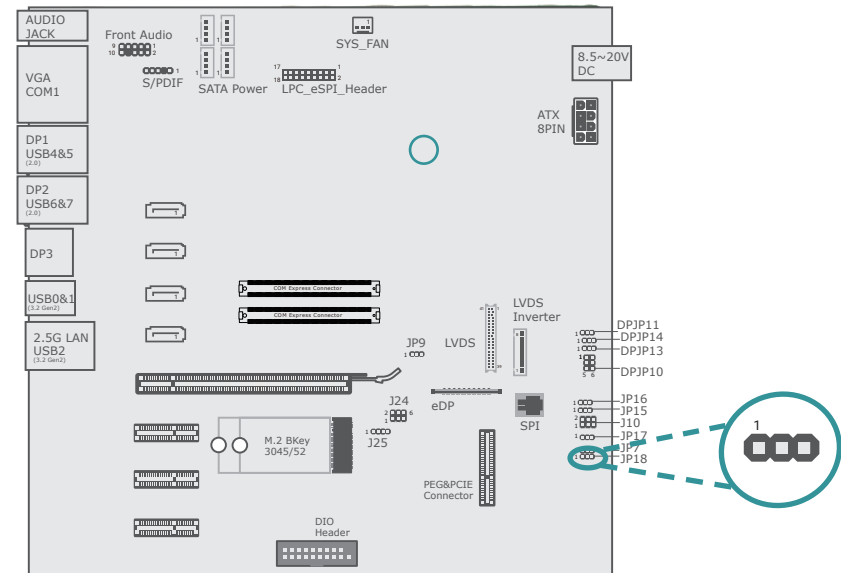


■ 1-2 On: COMe TYPE10



■ 2-3 On: COMe TYPE6

USB0\_HOST\_PRSENT (JP18)

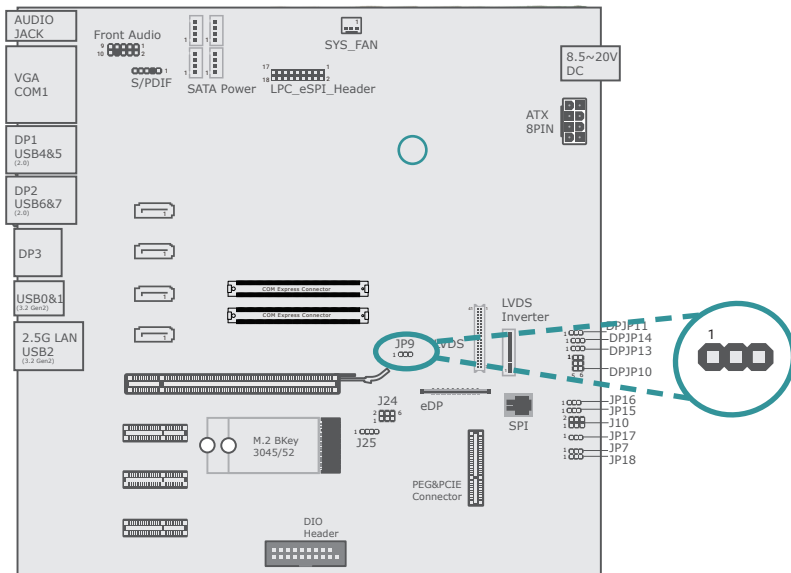


■ 1-2 On: Host present



■ 2-3 On: Host present

LVDS & eDP (JP9)



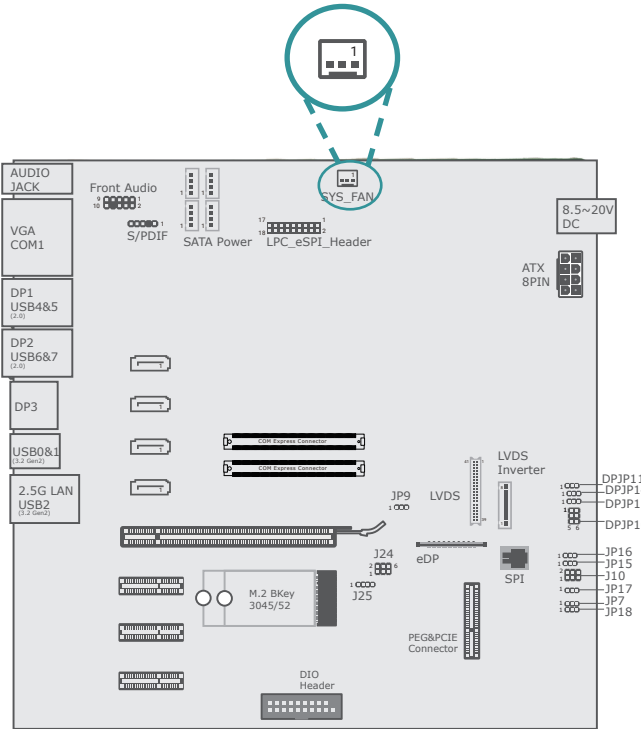
■ 1-2 On: 3V3 (default)



■ 2-3 On: GND

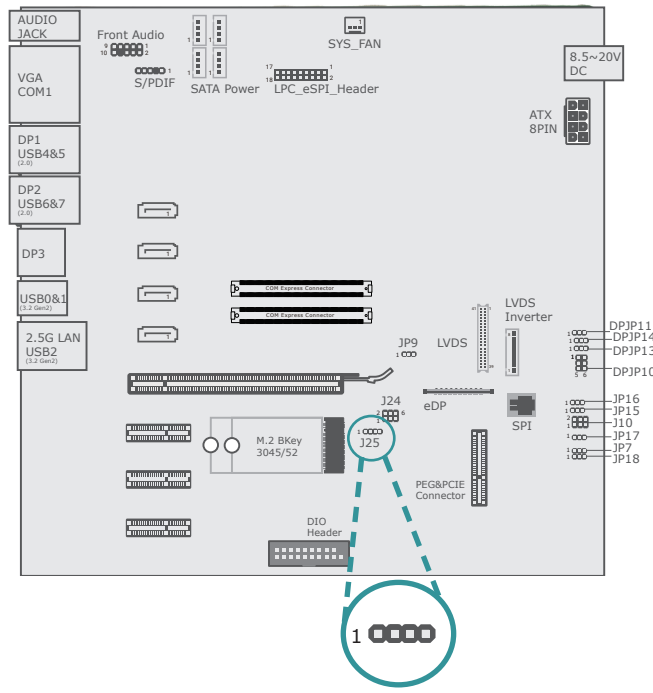
► Pin Assignment

System Fan (J18)



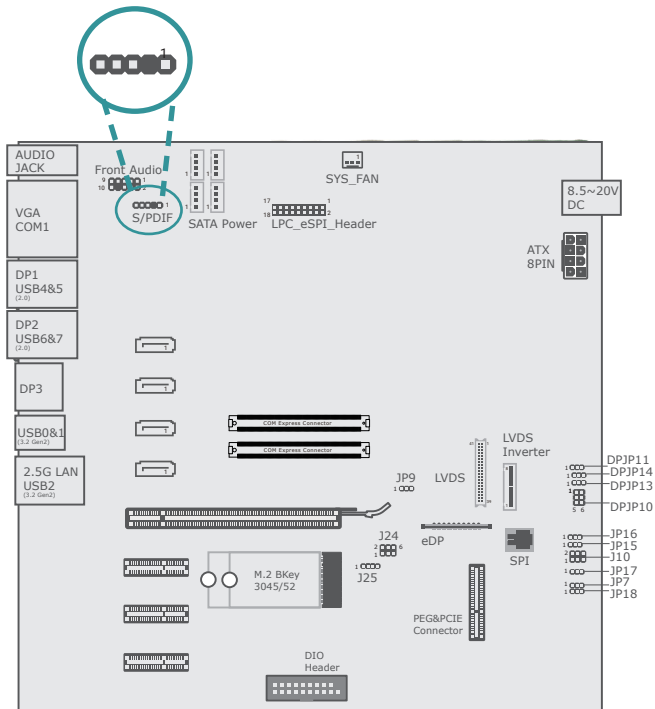
Pin	Assignment
1	GND
2	PWM
3	TACH

Serial Interface / CAN Bus Select (J25)



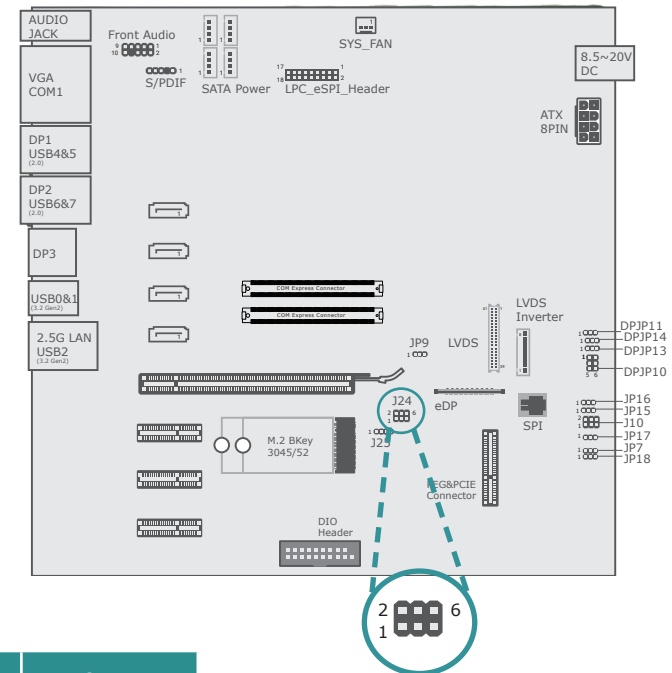
Pin	Assignment
1	CAN-High
2	GND
3	CAN-Low
4	NC

S/PDIF (AUJ1)



Pin	Assignment
1	5V
2	-
3	SPOUT
4	GND
5	SPIN

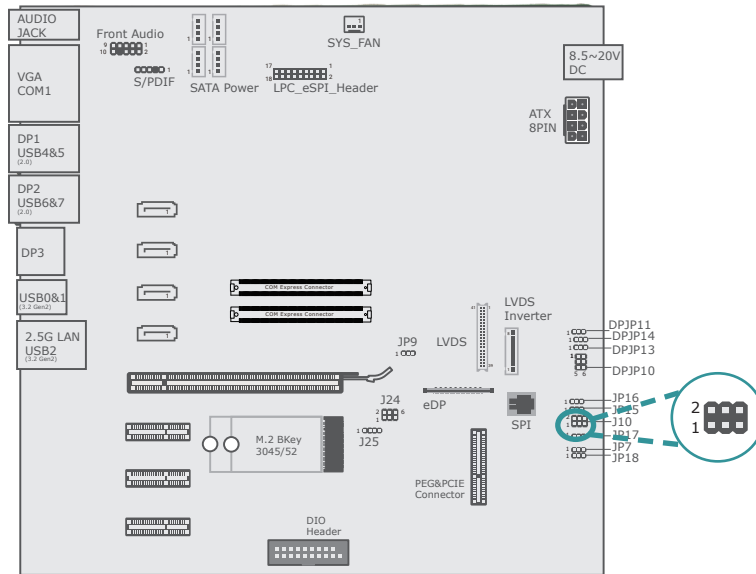
Serial Interface / CAN Bus Select (J24)



Pin	Assignment
1	SER1_TX
2	SER1_TX/CAN_TX
3	CAN_TX
4	SER1_RX
5	SER1_RX/CAN
6	CAN_RX

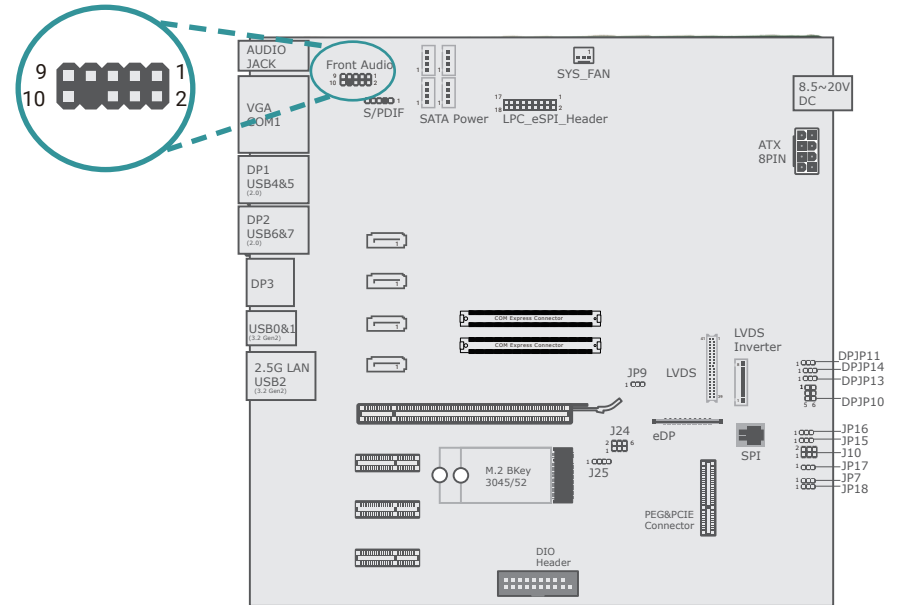


BIOS Boot Selection (J10)



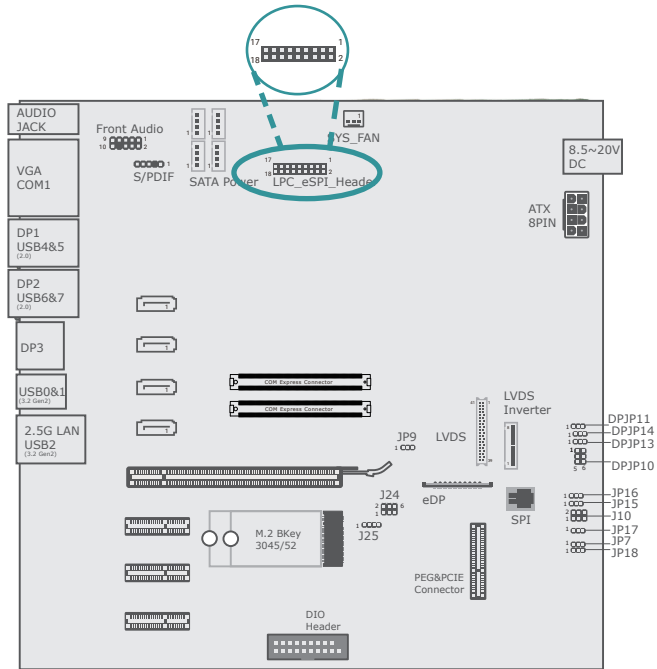
Pin	Assignment	Pin	Assignment
1	3V3SB	2	3V3SB
3	BIOS_DIS1-	4	BIOS_DIS0-
5	GND	6	GND

Front Audio (AUJ2)



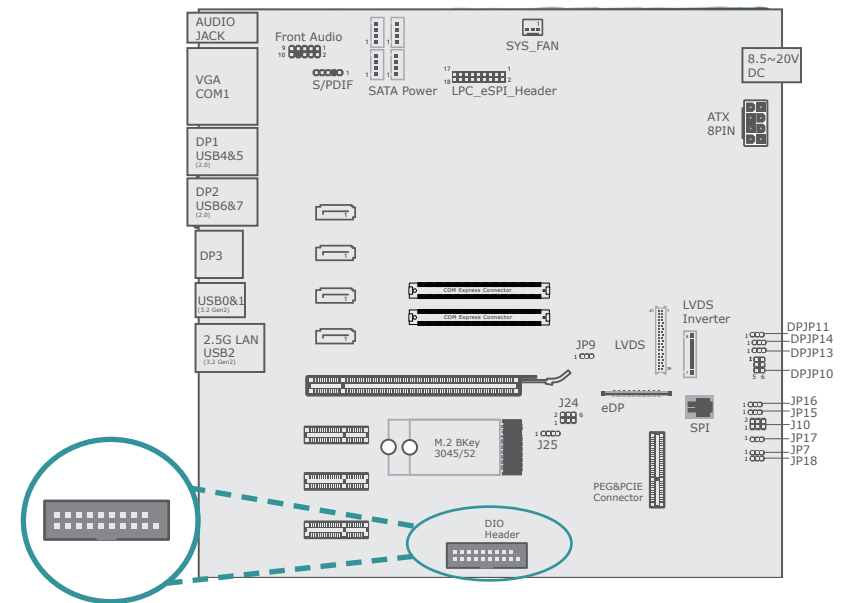
Pin	Assignment	Pin	Assignment
1	MIC2-L	2	A_GND
3	MIC2-R	4	--
5	LINE2-R	6	MIC2-JD
7	A_GND	8	--
9	LINE2-L	10	LINE2-JD

### LPC\_eSPI\_Header (J9)



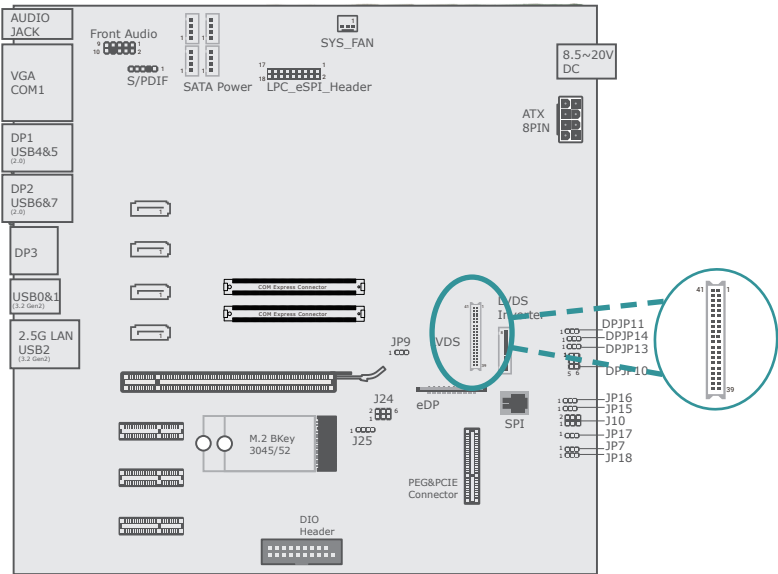
Pin	Assignment	Pin	Assignment
1	LPC_CLK_ESPI_CK_R	2	LPC_AD1_ESPI_IO1_R
3	LPC_RST	4	LPC_AD0_ESPI_IO0_R
5	LPC_FRAME-_ESPI_CS0-_R	6	3V3SB/3V3
7	LPC_AD3_ESPI_IO3_R	8	GND
9	LPC_AD2_ESPI_IO2_R	10	--
11	LPC_SERIRQ_ESPI_CS1-_R	12	GND
13	5VSB	14	5V
15	ESPI_RESET-	16	ESPI_ALERT0-
17	--	18	ESPI_ALERT1-
19	--	G1	--

### Digital IO Port (J15)



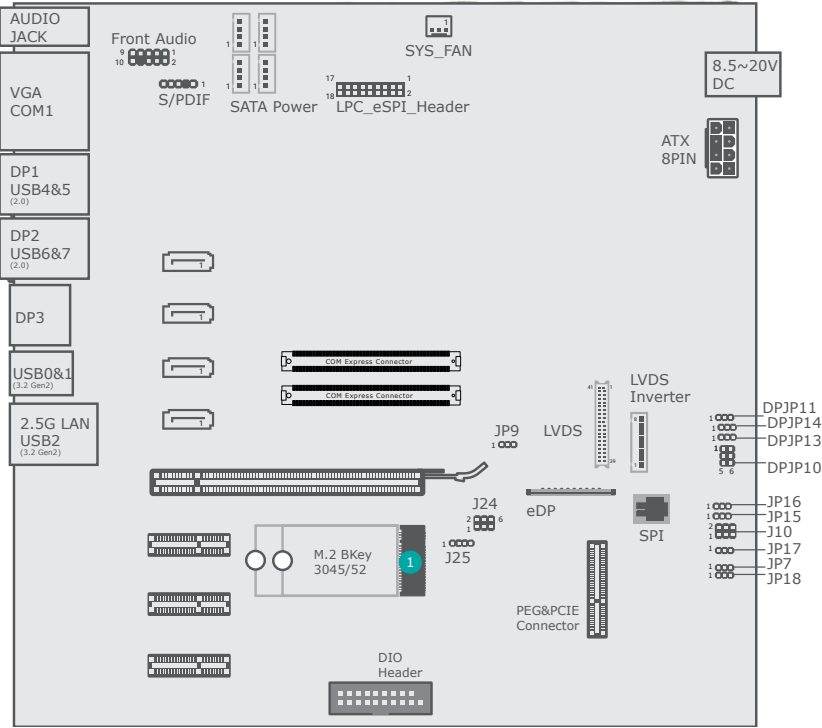
Pin	Assignment	Pin	Assignment
1	GND	2	12V_IO
3	GPO3	4	12V_IO
5	GPO2	6	GND
7	GPO1	8	5V
9	GPO0	10	5V
11	GPI3	12	GND
13	GPI2	14	5VSB
15	GPI1	16	5VSB
17	GPI0	18	GND
19	--	G1	GND

LVDS Connector (DPCN12)



Pin	Assignment	Pin	Assignment
1	GND	2	GND
3	LVDSA_Y3+	4	LVDSB_Y3+
5	LVDSA_Y3-	6	LVDSB_Y3-
7	GND	8	GND
9	LVDSA_Y2+	10	LVDSB_Y2+
11	LVDSA_Y2-	12	LVDS_Y2-
13	GND	14	GND
15	LVDSA_Y1+	16	LVDSB_Y1+
17	LVDSA_Y1-	18	LVDSB_Y1-
19	GND	20	GND
21	LVDSA_Y0+	22	LVDSB_Y0+
23	LVDSA_Y0-	24	LVDSB_Y0-
25	GND	26	GND
27	LVDSA_CLK+	28	LVDSB_CLK+
29	LVDSA_CLK-	30	LVDSB_CLK-
31	GND	32	GND
33	EDID_CLK	34	--
35	EDID_DATA	36	LVDS_3V3
37	GND	38	GND
39	PANEL-PWR	40	PANEL-PWR

► Expansion Slots

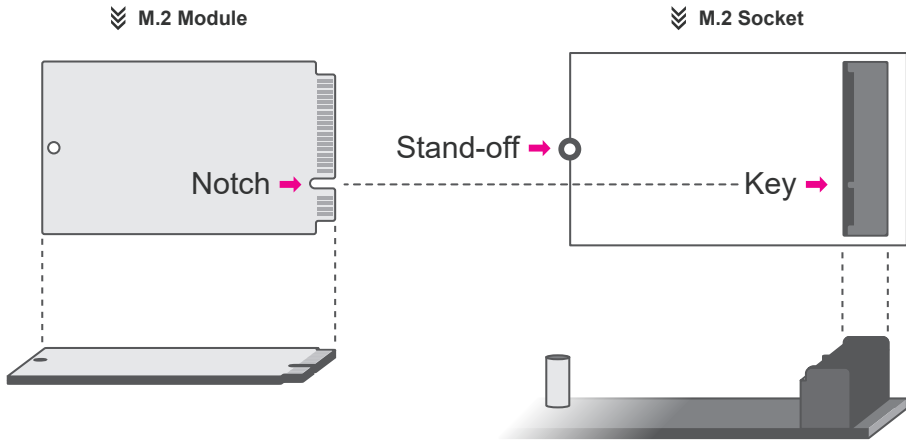


1 M.2 B-Key

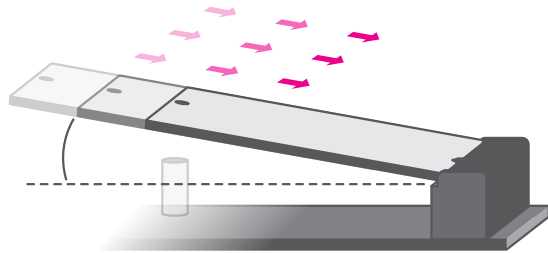
Installing the M.2 Module

Before installing the M.2 module into the M.2 socket, please make sure that the following safety cautions are well-attended.

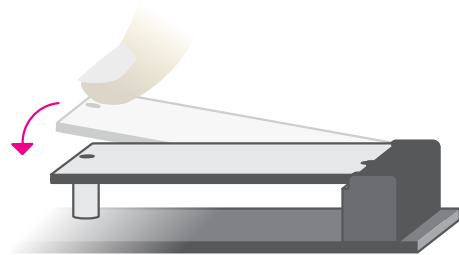
- 1. Make sure the PC and all other peripheral devices connected to it has been powered down.
- 2. Disconnect all power cords and cables.
- 3. Locate the M.2 socket on the system board
- 4. Make sure the notch on card is aligned to the key on the socket.
- 5. Make sure the standoff screw is removed from the standoff.



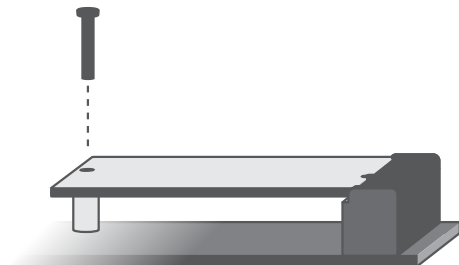
Please follow the steps below to install the card into the socket.



**Step 1:**  
Insert the card into the socket at an angle while making sure the notch and key are perfectly aligned.



**Step 2:**  
Press the end of the card far from the socket down until against the stand-off.



**Step 3:**  
Screw tight the card onto the stand-off with a screw driver and a stand-off screw until the gap between the card and the stand-off closes up. The card should be lying parallel to the board when it's correctly mounted.