

# DFI

## KSM-KH Installation Guide



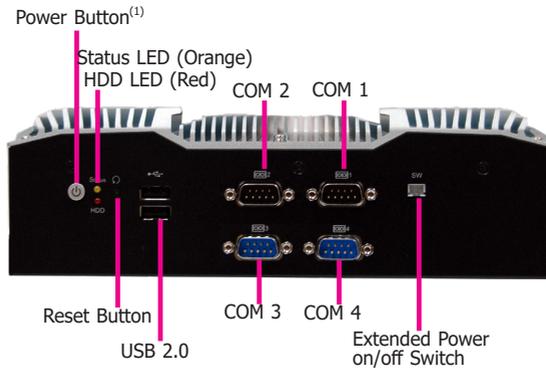
### Package Contents

- |  |
|--|
| • One 15", 19", or 21.5" Modular Touch Panel PC    |
| • Power cable with 3-pole terminal block connector |
| • SATA, Mini PCIe and M.2 Installation Screws      |
| • Extended power switch cable                      |

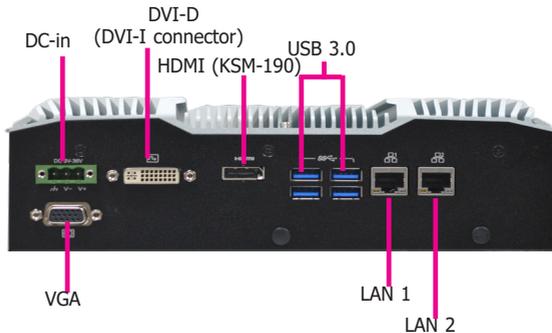
DFI reserves the right to change the specifications at any time prior to the product's release. For the latest revision and more details of the installation procedure, please refer to the user's manual on the website.

# Panel

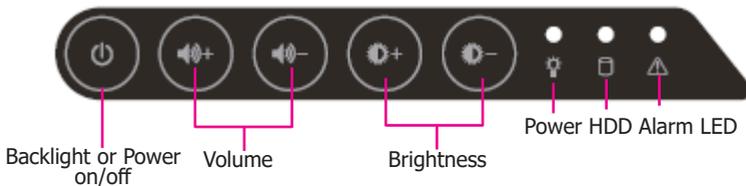
## Bottom View



## Top View



## Front OSD Functions (only for models with front OSD)



### Notes on OSD Settings:

The front OSD is capable of controlling the system in the following ways in addition to its explicit functions.

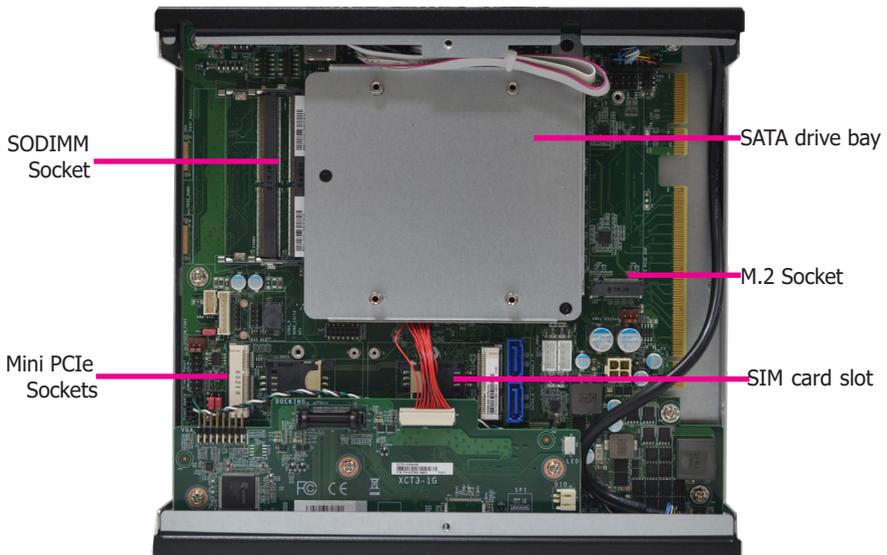
1. System Power On/Off: Press the Backlight on/off button for 3 seconds.
2. Light Sensor On/Off: Press the Brightness up arrow for 3 seconds.
3. OSD Lock/Unlock: Press the Brightness down arrow for 3 seconds.
4. The Alarm LED has no function for the KSM-KH Series.

## Removing the Chassis Cover

1. Make sure the system and all other peripheral devices connected to it have been powered-off.
2. Disconnect all power cords and cables.
3. Remove mounting screws at each side of the system box.



4. Lift the cover to open the system.
5. The Mini PCIe, M.2 and the SODIMM slots are readily accessible after removing the chassis cover.



## Installing a SATA Drive

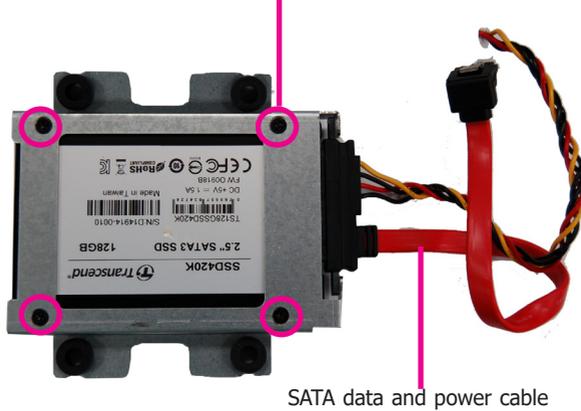
The system can accommodate one SATA drive. Please use the following procedure to install a SATA drive in the system.

1. Before installing the SATA drive, connect the SATA data/power cable to the SATA data connector of the SATA drive. Then install the SATA drive onto the HDD bracket with the provided mounting screws.

Mounting Screws



Mounting screws



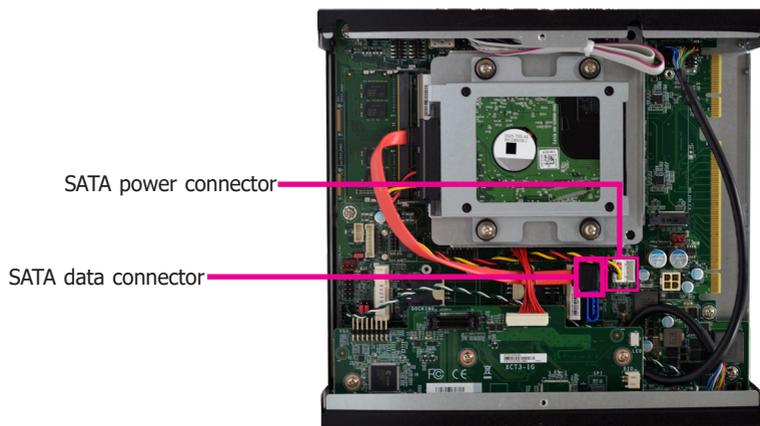
SATA data and power cable

2. Place the SATA drive installed with the HDD bracket in the system. Align the mounting holes on the HDD bracket with the mounting holes on the drive bay and use the provided mounting screws to secure the drive in place.

Mounting Screws



3. Connect the other end of the SATA data/power cable to the SATA data and power connectors on the system board respectively.



## Installing a SODIMM

The system supports two DDR4 SODIMM socket. To install a memory module, grasp the memory module by its edges and align the module's notch with the socket's notch; then insert the memory into the socket at an angle and push it down until you feel a click.

Insert the memory  
at an angle



SODIMM module  
installed into the socket



### Notes:

1. The system supports dual-channel configuration. To enable dual-channel, populate both SODIMM sockets.
2. If installing only one memory module, please install it on the memory socket labeled DIMM 1 (the one closer to the center of the board).
3. The SODIMM sockets can only accept DDR4 memory modules. Please do not install other types of memory modules. The SKUs with Intel® CM238 Chipset support ECC memory.

## Installing an M.2 Card

The onboard M.2 Type 2280 connector (M Key) supports PCIe NVMe modules up to PCIe Gen 3.0 x4 bandwidth. Note that only SKUs with Intel® QM175 Chipset support M.2 socket.



To install an M.2 card, insert the bottom edge of the M.2 card into the connector, and then secure the card to the standoff with the provided mounting screw.

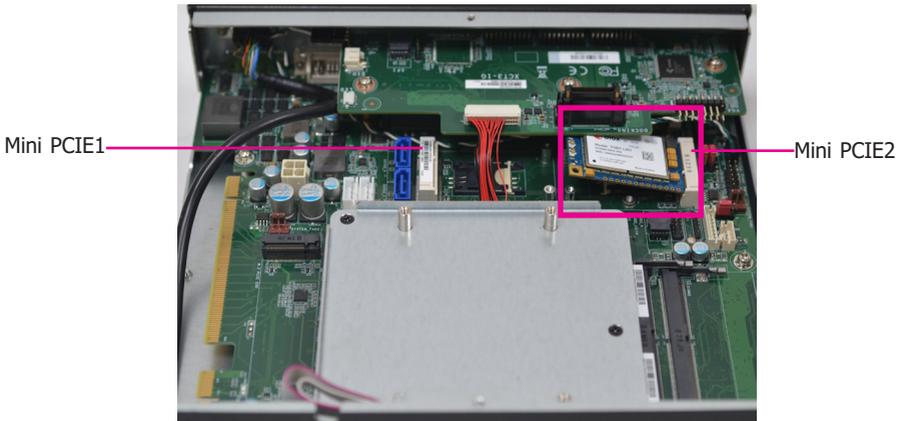


Mounting Screw

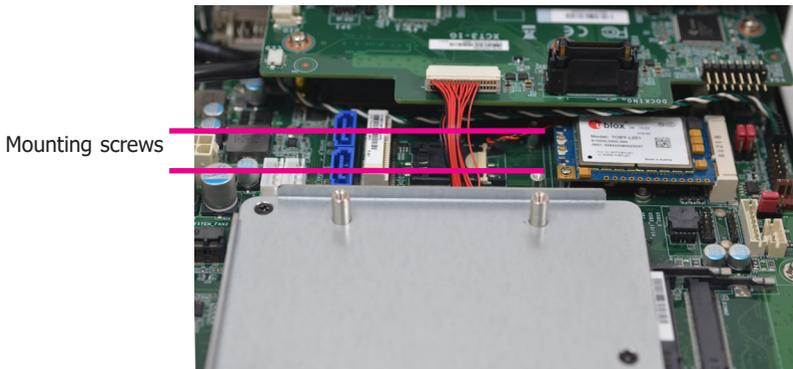
## Installing a Mini PCIe Card and a SIM Card

The system board is equipped with 2 Mini PCIe slots with SIM card sockets to support a variety of wireless LAN and mobile broadband communication modules. Mini PCIe slot 1 provides both USB and PCIe interfaces whereas Mini PCIe slot 2 provides only USB interface.

1. Grasp the Mini PCIe card by its edges and align the notch in the connector of the Mini PCIe card with the notch in the connector on the system board.



2. Push the Mini PCIe card down and use the provided mounting screws to secure the card on the system board.



## Installing a SIM Card

Open the SIM card socket by pushing the white latch inward.



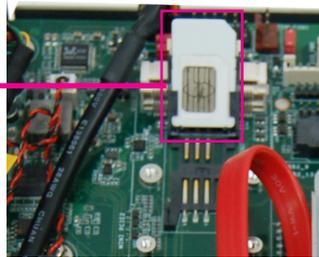
Push the latch inward to open it



Push the latch outward to close it

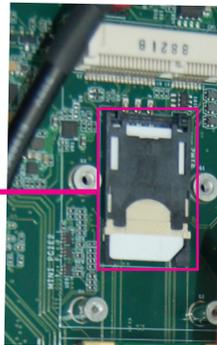
Insert the SIM card into the slot. Please place the card with the IC facing down and the angled corner aligning with the socket's angled corner so it will be correctly in contact with the system board.

Flip the cover up to open it



Close the slot's cover and lock the slot by pushing the white latch outward.

Close the cover and lock it





## Assemble the Modular Panel PC

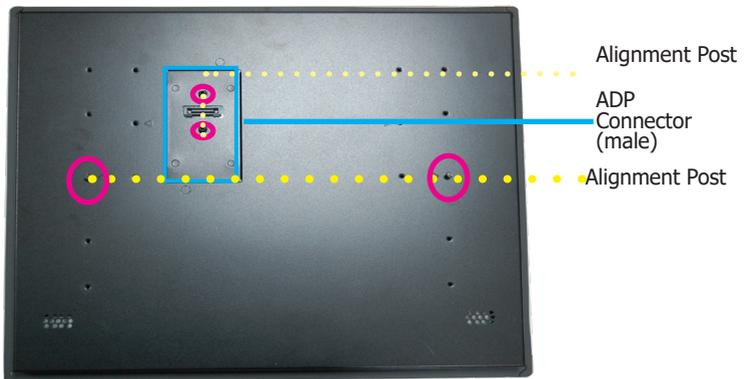
The modular panel PC comprises two parts: a box module and a panel module.

1. At the bottom of the box, there's a male ADP connector.



**Box Module**

2. Hold the box module with its ADP connector (female) in line with the ADP connector (male) of the panel module. Align the box module with the panel module using the alignment posts.

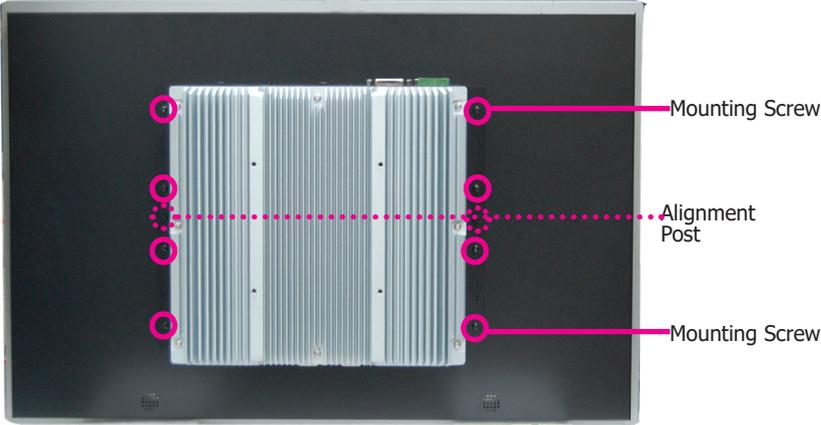


**Panel Module**

**Note:**

If the orientation of the assembly is not correct, the box module will not seat evenly on top of the panel module, which results in some space in between them and indicates that the ADP connectors are not engaged. When this is the case, please turn the box module the other way around.

3. Make sure that the box module seats on top of the panel module with the alignment post effortlessly slipping into the designated holes on the box module. Press to install these two modules and secure the installation with 8 mounting screws.



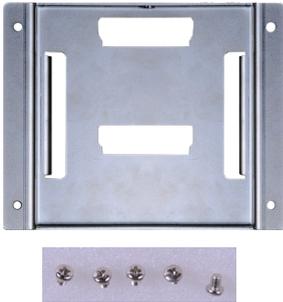
**Box + Panel Module**

## Mounting Options

### VESA mount

The VESA-mount specifications for this device is 100 x 100 (mm). Please use a compatible VESA mount kit that can sustain the weight and size of this device. The VESA mount kit includes the following:

- 2 VESA mount brackets
- Bracket screws



VESA mount bracket 1



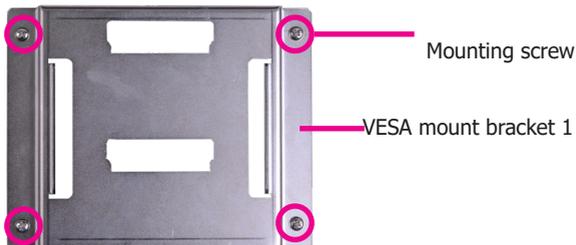
VESA mount bracket 2

1. Before starting any installation procedures, attach the poron foam to the Panel PC.

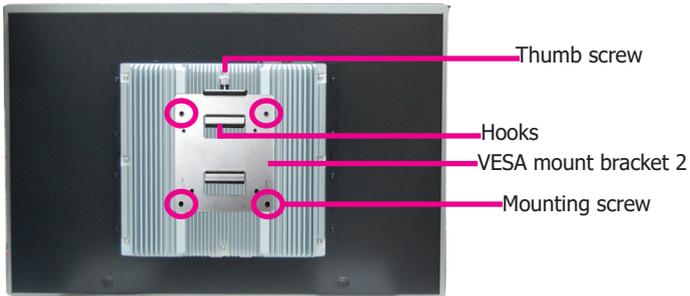


Poron foam

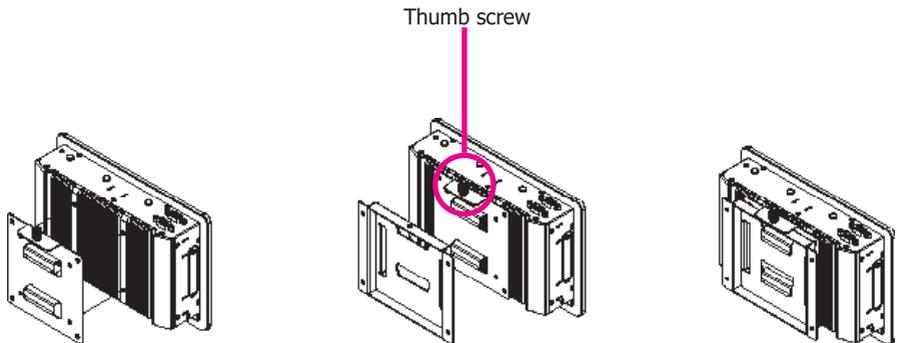
2. Select a place on the wall where you will mount the Panel PC.
3. Use the provided mounting screws to attach "VESA mount bracket 1" to the wall.



4. The system has designed Attach the other bracket (VESA mount bracket 2) to the rear of the Panel PC.



5. Slide the Panel PC to "wall mount bracket 1" to attach the two brackets with the hooks. Then tighten the thumb screw to secure the assembly in place. Note that the following diagram is for illustration only and may not resemble the actual product.



## Panel mount

The panel mounting kit includes the following:

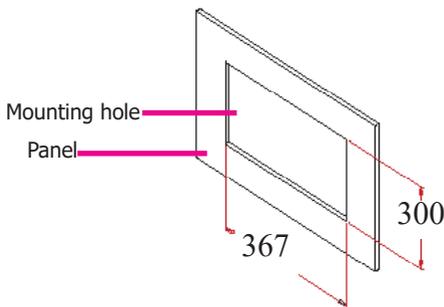
- 10 mounting clamps



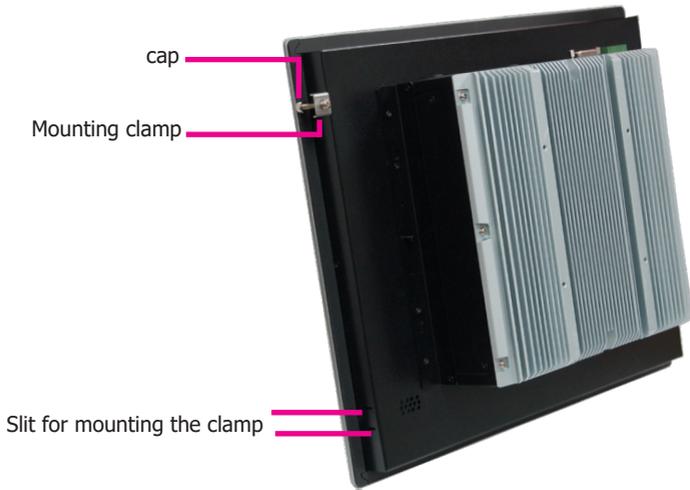
1. Before starting any installation procedures, attach the poron foam to the Panel PC.



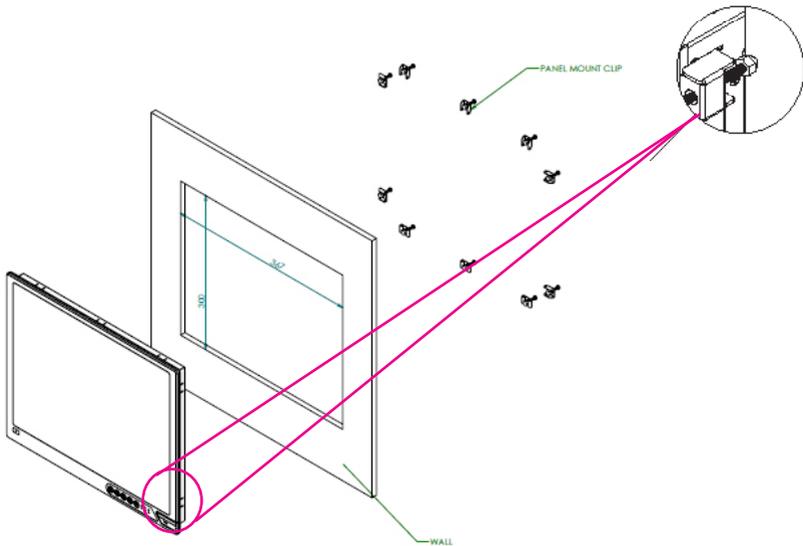
2. Select a place on the panel (or wall) where you will mount the Panel PC.
3. Cut out a shape on the panel that corresponds to the Panel PC's rear dimensions (15": 367mm x 300mm; 18.5": 454mm\*296mm; 19": 447mm x 380mm; 21.5": 526.2mm x 342.6mm) and ensure that the Panel PC can be fitted into the panel properly.



4. Insert the Panel PC from the outside surface of the panel into the mounting hole until it is properly fitted against the panel.
5. Position the mounting clamps along the rear edges of the Panel PC and insert them into the slits around the Panel PC. Note that the following diagram is for illustration only and may not resemble the actual product.



- The first and second clamps must be positioned and secured diagonally prior to mounting the rest of the clamps. Tighten the clamp's screw using an electric screwdriver by pressing the flat cap onto the back of the panel.

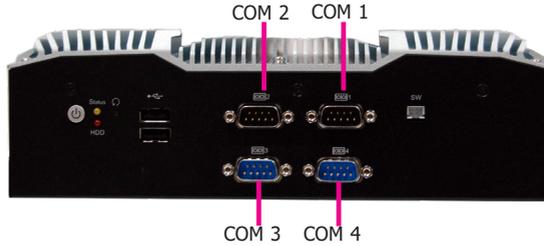


**Note:**

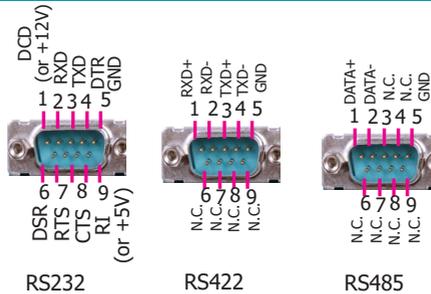
The maximum thickness of your panel's mounting wall should be 10 mm for secure panel mount.

## Communication Port Pin Assignments

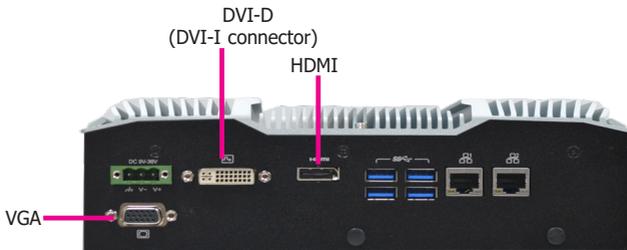
The system is equipped with 4 COM ports that enable serial communication. The COM 1 and COM 2 ports can be switched between typical RS232 or RS422 with power on its Pin NO.1 (12V) and Pin No.9 (5V).



COM 1/COM 2 (RS232 with power/422/485)  
COM 3~COM4 (RS232/422/485)



The system is also equipped with 3 display ports: DVI-D, HDMI, and VGA.



### Notes:

1. The DVI-D port can be in HDMI or DVI-D.
2. The HDMI is a DP++/HDMI combo port but can only transmit HDMI signals (unless wired as a DP++ port). Please plug in an HDMI cable with the right orientation and alignment to avoid damage to the connector. You should feel resistance (due to a pin on the right) if the cable is not inserted correctly. Please see a video at <https://youtu.be/SUj07rfN5I8> for detailed instructions.

Aligning side (left)



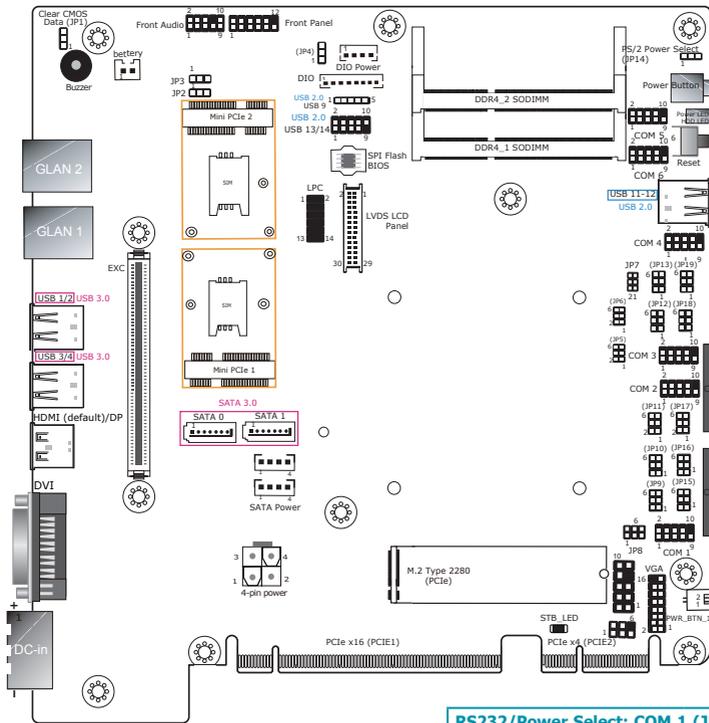
Angled-corner pin

Angled-corner (up)

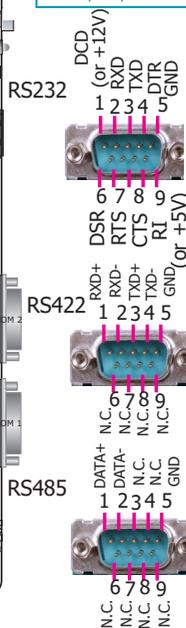


Align this edge with the left side of the connector

# Board Layout and Jumper Settings



COM 1/COM 2:  
RS232 with power/422/485  
COM 3~COM4:  
RS232/422/485



| Clear CMOS Data  | JP1    |
|------------------|--------|
| Normal (default) | 1-2 On |
| Clear CMOS Data  | 2-3 On |

| DIO bit 0~3 Pull-up/Pull-down Selection | JP3    |
|---|--------|
| Pull-up                                 | 1-2 On |
| 5V/5V_Standby                           |        |
| Pull down GND                           | 2-3 On |

| DIO bit 4~7 Pull-up/Pull-down Selection | JP2    |
|---|--------|
| Pull-up                                 | 1-2 On |
| 5V/5V_Standby                           |        |
| Pull down GND                           | 2-3 On |

| DIO bit 0~7 Power Source selection | JP4    |
|------------------------------------|--------|
| 5V_Standby                         | 1-2 On |
| 5V                                 | 2-3 On |

| PS/2 KB/MS Power source | JP14   |
|-------------------------|--------|
| 5V                      | 1-2 On |
| 5V_Standby              | 2-3 On |

| RS232/Power Select: COM 1 (JP8), COM 2 (JP7) |                          |
|--|--------------------------|
| RS232 (default)                              | 1-3 (RI), 2-4 (DCD) On   |
| RS232 with power                             | 3-5 (+5V), 4-6 (+12V) On |

| RS232/422/485 Select: COM 1 (JP10), COM 2 (JP16)<br>COM 3 (JP13), COM 4 (JP5) |             |
|---|-------------|
| RS232 (default)   | 1-3, 4-6 On |
| RS422 Full Duplex   | 3-5, 4-6 On |
| RS485   | 3-5, 2-4 On |

| RS232/422/485 Select:<br>COM 1 (JP9/JP15), COM 2 (JP11/JP17)<br>COM 3 (JP12/JP18), COM 4 (JP6/JP19) |             |
|---|-------------|
| RS232 (default)   | 1-3, 2-4 On |
| RS422 Full Duplex/RS485   | 3-5, 4-6 On |

## Notes:

1. When COM1 RS232/422/485 is selected, JP9 and JP15 must be set in accordance to JP10.
2. When COM2 RS232/422/485 is selected, JP11 and JP17 must be set in accordance to JP16.
3. When COM3 RS232/422/485 is selected, JP12 and JP18 must be set in accordance to JP13.
4. When COM4 RS232/422/485 is selected, JP6 and JP19 must be set in accordance to JP5.