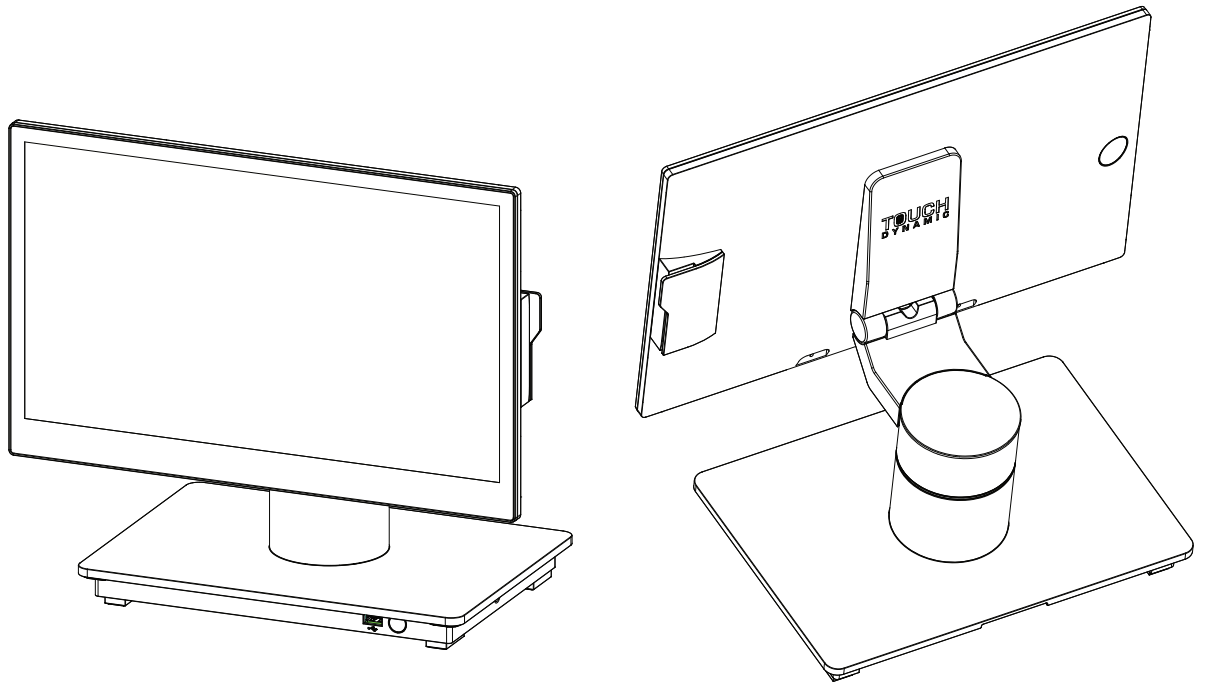


USER MANUAL

VERSION 2.0 December 2021

RAZOR



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Safety

IMPORTANT SAFETY INSTRUCTIONS

1. To disconnect the machine from the electrical power supply, turn off the power switch and remove the power cord plug from the wall socket. The wall socket must be easily accessible and in close proximity to the machine.
2. Read these instructions carefully. Save these instructions for future reference.
3. Follow all warnings and instructions marked on the product.
4. Do not use this product near water.
5. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
6. Slots and openings in the cabinet and the back or bottom are provided for ventilation to ensure reliable operation of the product and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register or in a built-in installation unless proper ventilation is provided.
7. This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
8. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.
9. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.



This device complies with the requirements of the EEC directive 2014/30/EU with regard to “Electromagnetic compatibility” and 2014/35/EU “Low Voltage Directive”.



This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

CAUTION ON LITHIUM BATTERIES

There is a danger of explosion if the battery is replaced incorrectly. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer’s instructions.



Battery Caution

Risk of explosion if battery is replaced by an incorrectly type. Dispose of used battery according to the local disposal instructions.



Safety Caution

Note: To comply with IEC60950-1 Clause 2.5 (limited power sources, L.P.S) related legislation, peripherals shall be 4.7.3.2 “Materials for fire enclosure” compliant.

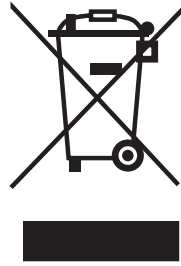
4.7.3.2 Materials for fire enclosures

For MOVABLE EQUIPMENT having a total mass not exceeding 18kg.the material of a FIRE ENCLOSURE, in the thinnest significant wall thickness used, shall be of V-1 CLASS MATERIAL or shall pass the test of Clause A.2.

For MOVABLE EQUIPMENT having a total mass exceeding 18kg and for all STATIONARY EQUIPMENT, the material of a FIRE ENCLOSURE, in the thinnest significant wall thickness used, shall be of 5VB CLASS MATERIAL or shall pass the test of Clause A.1

LEGISLATION AND WEEE SYMBOL

2012/19/EU Waste Electrical and Electronic Equipment Directive on the treatment, collection, recycling and disposal of electric and electronic devices and their components.



The crossed dust bin symbol on the device means that it should not be disposed of with other household wastes at the end of its working life. Instead, the device should be taken to the waste collection centers for activation of the treatment, collection, recycling and disposal procedure.

To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract.

This product should not be mixed with other commercial wastes for disposal.

Revision History

Changes to the original user manual are listed below:

Revision	Description	Date
1.0	<ul style="list-style-type: none">Initial release	March 2021
2.0	<ul style="list-style-type: none">Elkhart Lake motherboard added2nd display installation modified	December 2021

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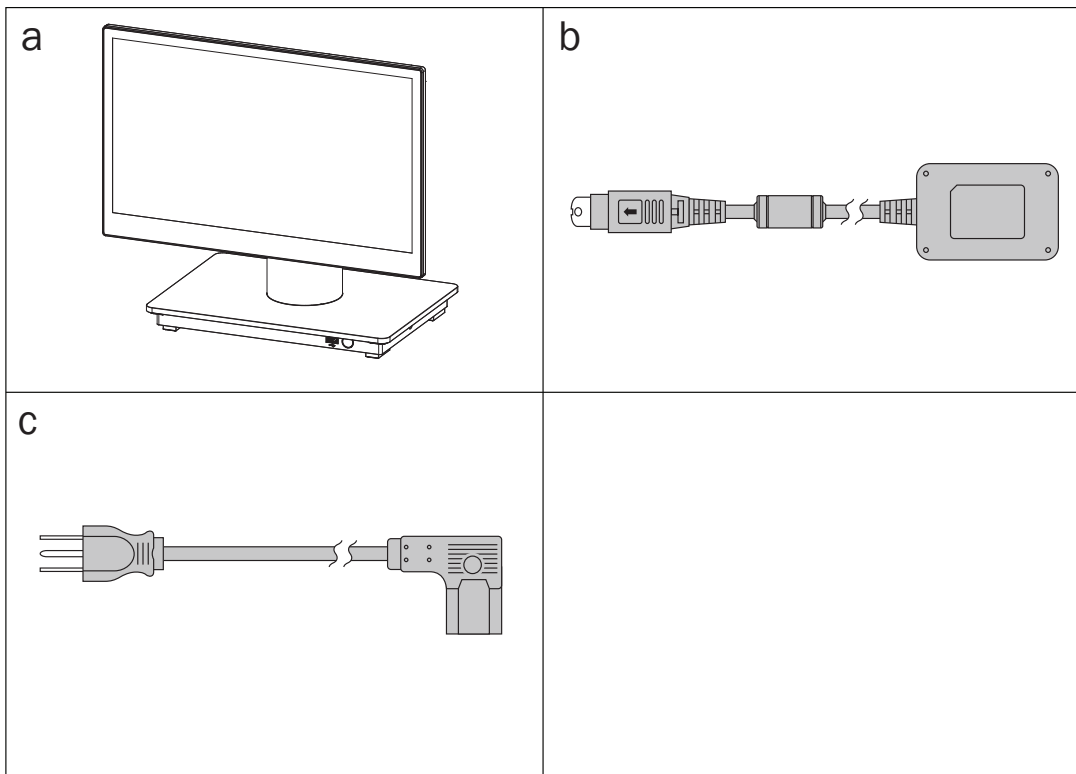
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1. Packing List

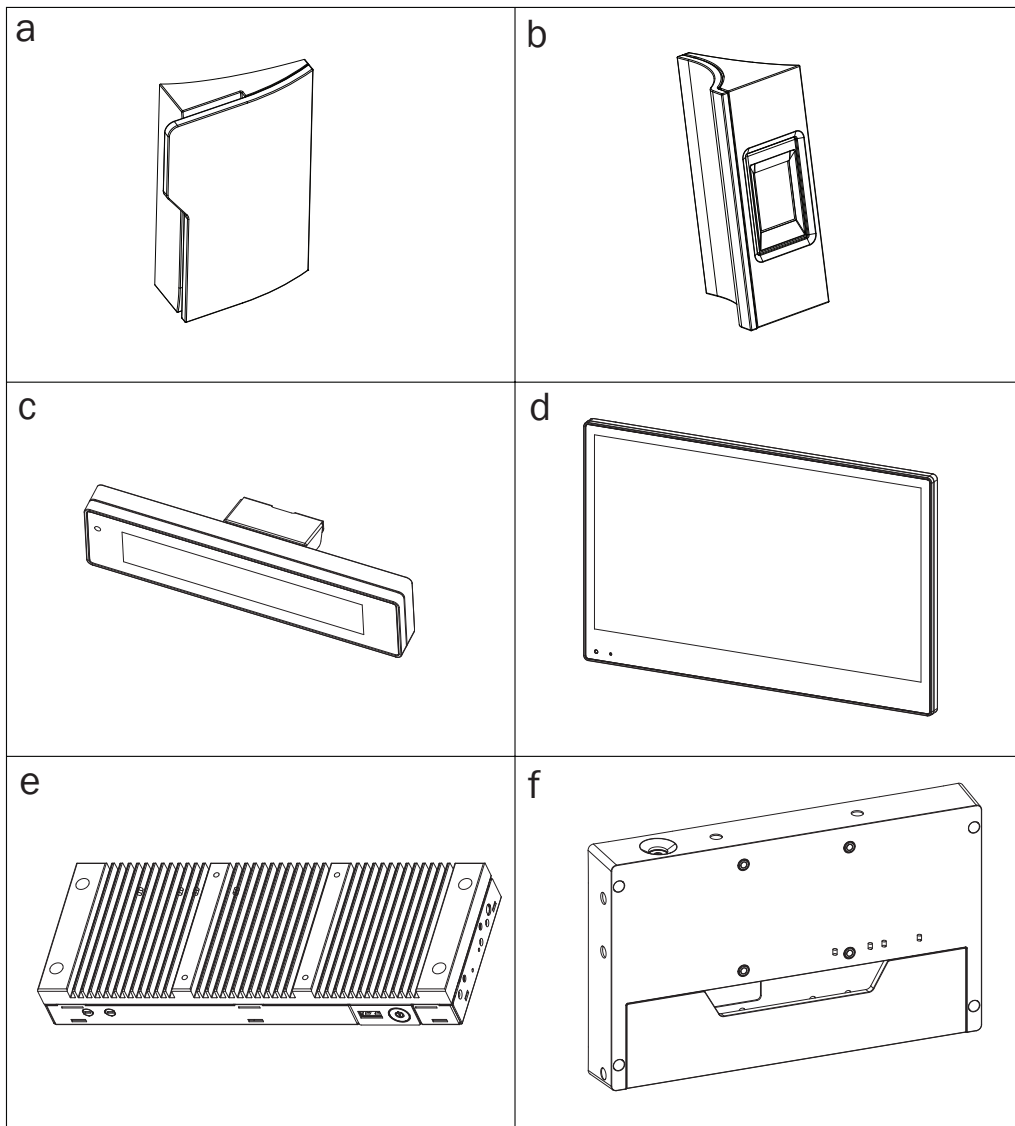
1-1. Standard Accessories



- a. System
- b. Power adapter (90W)
- c. Power cord

Note: Power cord will be supplied differently according to various region or country.

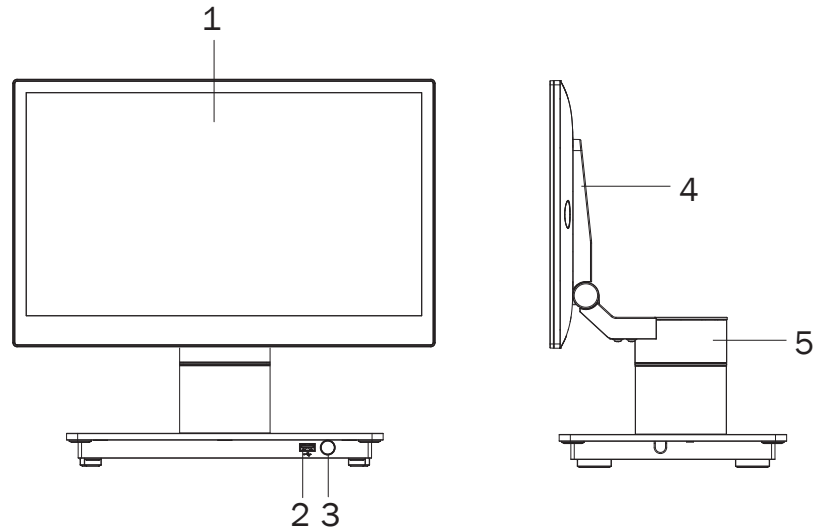
1-2. Optional Accessories



- a. MSR
- b. Fingerprint
- c. Customer display
- d. 11.6" or 15.6 2nd display
- e. PC box
- f. Panel mount kit

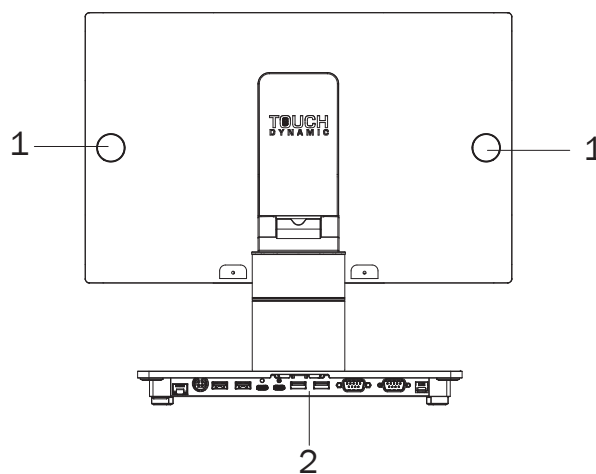
2. System View

2-1. Front & Side View



No.	Description
1	Touch screen
2	USB2.0
3	Power button
4	Hinge cover
5	Swivel base

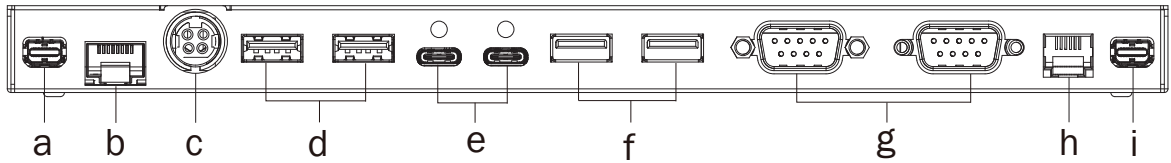
2-2. Rear View



No.	Description
1	Dummy door of MSR/iButton module
2	System box

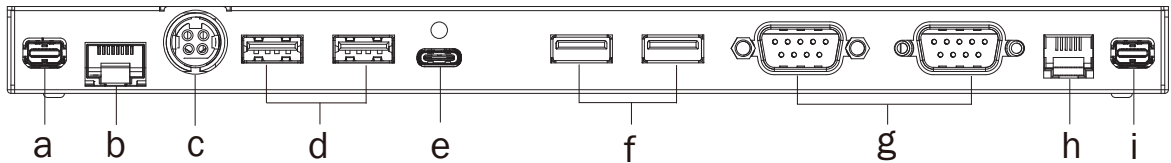
2-3. IO Ports View

Windows Motherboard



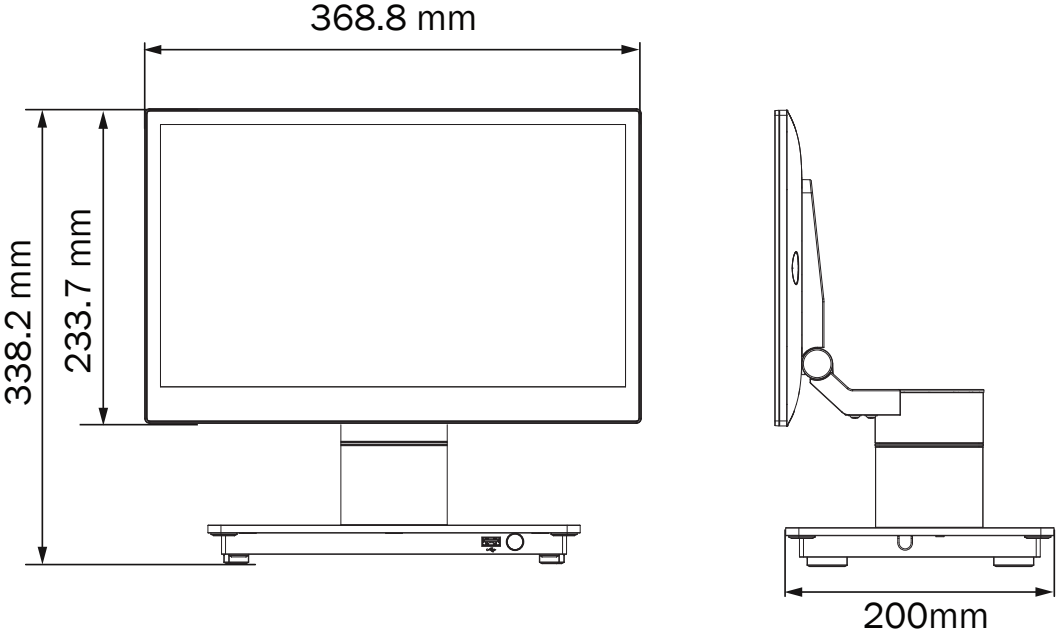
No.	Description
a	FeDP (2 nd display)
b	LAN
c	DC 19V in
d	USB 2.0 x 2
e	USB Type C x 2
f	USB 3.0 x 2
g	COM x 2
h	Cash drawer
i	FeDP (Main display)

Android Motherboard



No.	Description
a	FeDP (2 nd display)
b	LAN
c	DC 19V in
d	USB 2.0 x 2
e	USB Type C
f	USB 3.0 x 2
g	COM x 2
h	Cash drawer
i	FeDP (Main display)

2-4. System Dimensions

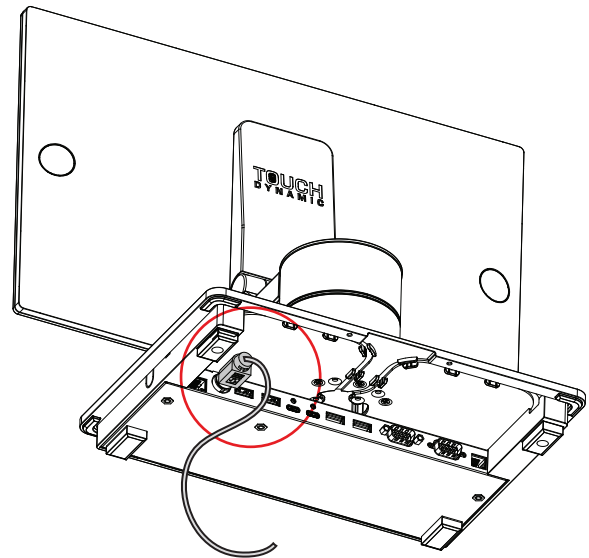


3. System Assembly & Disassembly

3-1. Install the Power Adapter

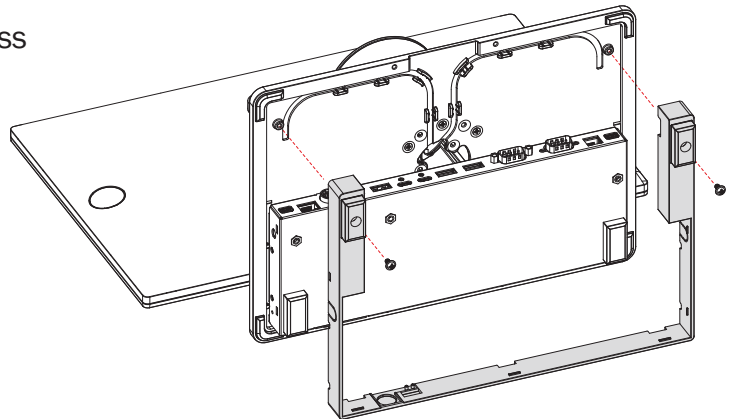
The system is equipped with an external power adapter. Please plug it into the system as shown below.

1. Find the DC-in connector located on the bottom of the system.(refer to Chapter 2-3 c).
2. Plug the cable directly into the connector then plug the adapter directly into the AC outlet.

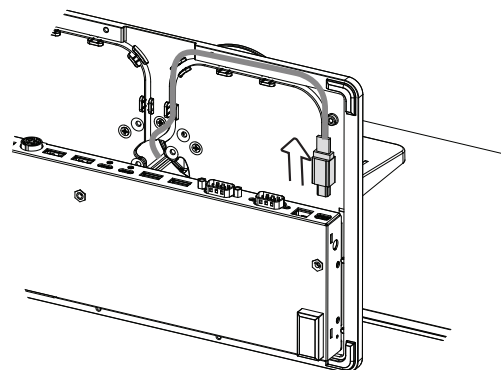


3-2. Remove the System Box

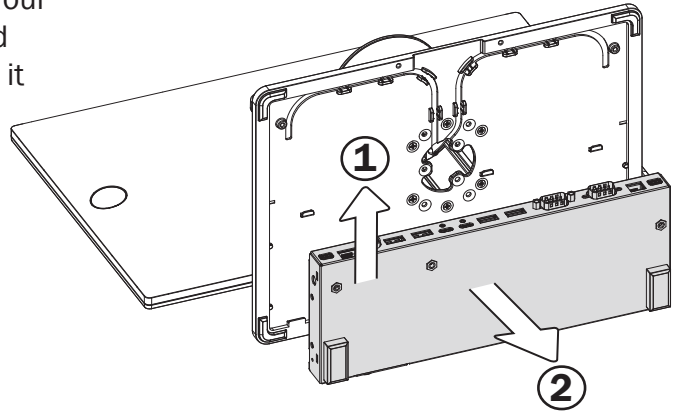
1. Lay down the system to access the bottom of the stand.
2. Remove the screws (x2) and pull the holder of the system box outwards.



3. Disconnect the cable of the LCD panel.

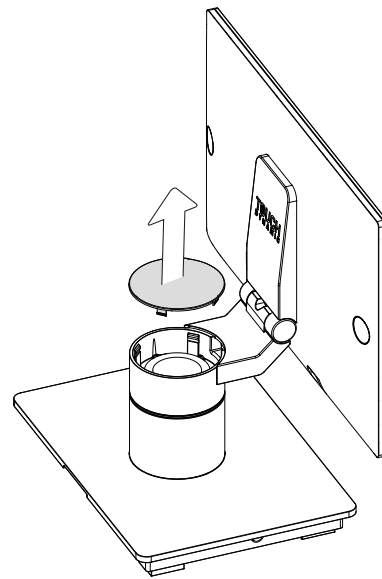


4. The system box is placed onto four hooks. Lift the system box and then pull it outwards to release it from the bottom of the stand.

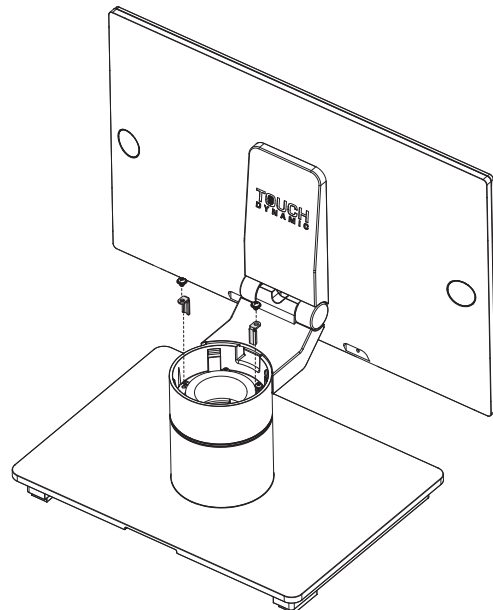


3-3. Adjust the Stand Arm Angle

1. The 0°~175° rotatable stand arm offers adjustment for showcasing without missing any viewing angles. To fix the angle of the stand arm in place, please open the top cover first.

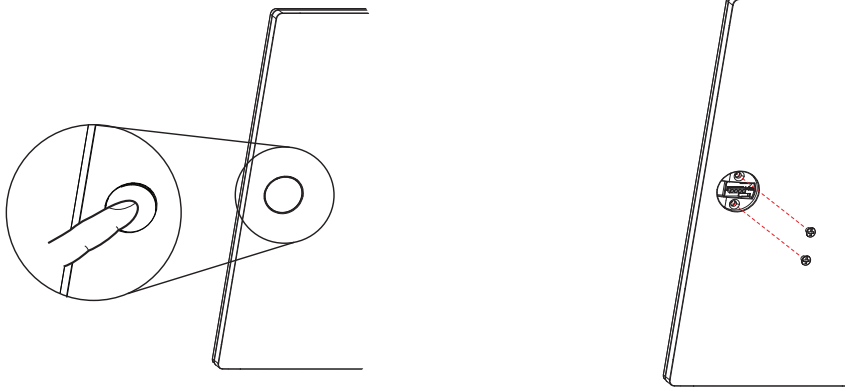


2. Turn to the angle you need, then insert the L shape brackets (x2) in the grooves and fasten the screws (x2) to ensure the stand arm is fixed.

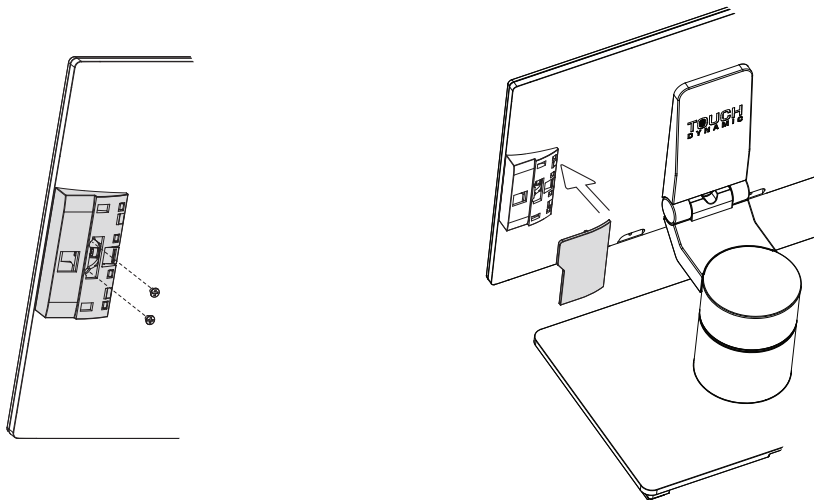


4. Peripherals Installation

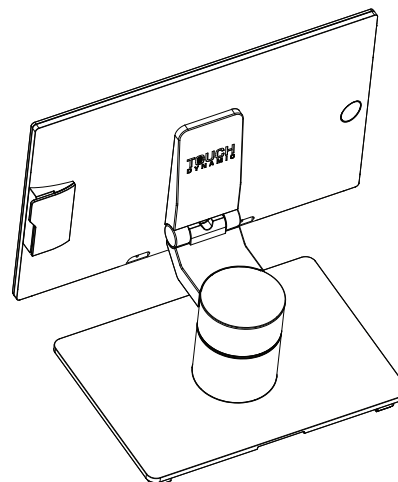
4-1. Install the MSR Module



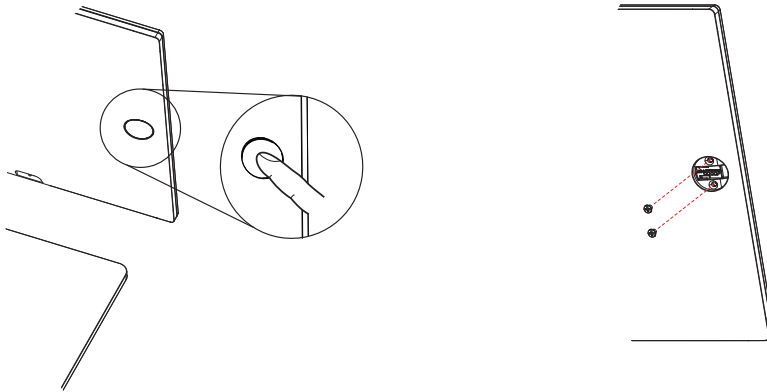
1. The vv module can be installed to each side of the system depends on your preference.
2. Press to remove the dummy cover and then loosen the screws (x2).



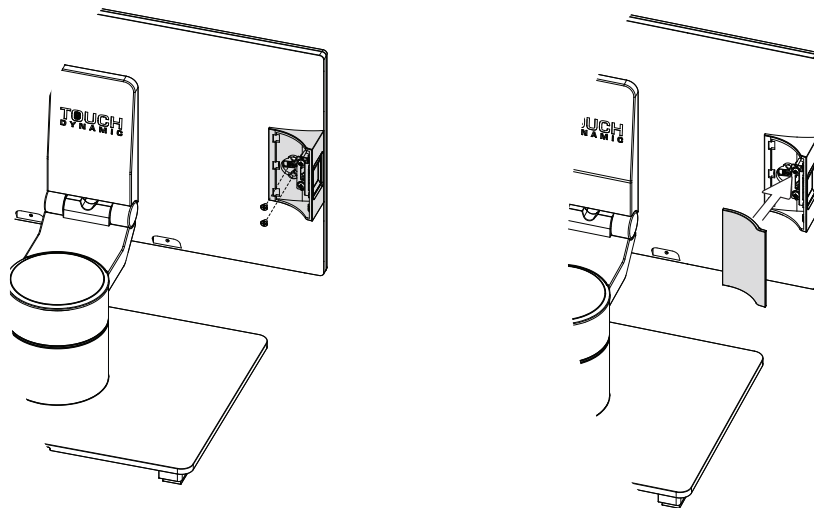
3. Position the MSR module and fasten the screws (x2) on the back to secure the module.
4. Attach the top cover of the modules and make sure it locks in place.



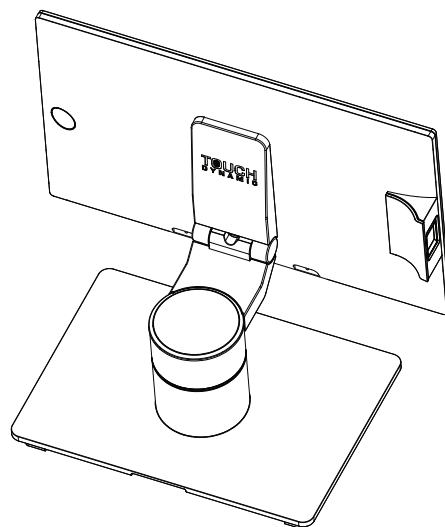
4-2. Install the Fingerprint Module



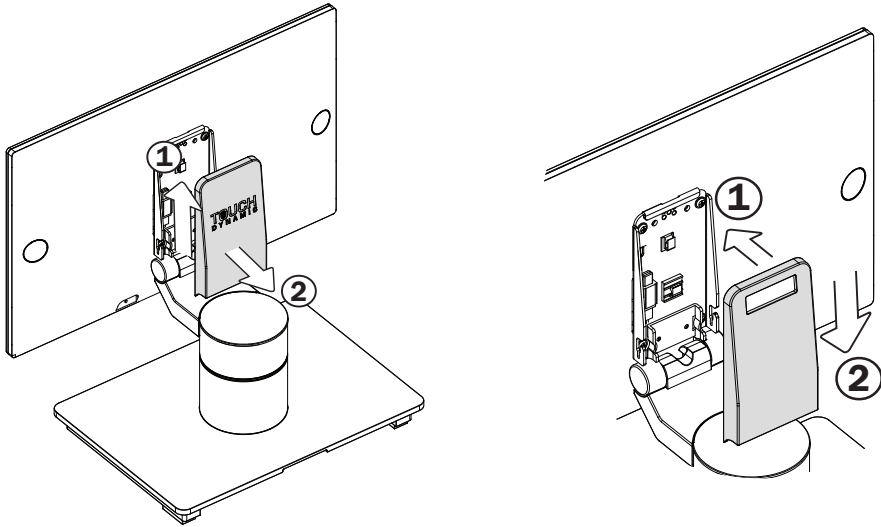
1. The Fingerprint module can be installed to each side of the system depends on your preference.
2. Press to remove the dummy cover and then loosen the screws (x2).



3. Position the Fingerprint module and fasten the screws (x2) on the back to secure the module.
4. Attach the top cover of the modules and make sure it locks in place.



4-3. Install the Customer Display

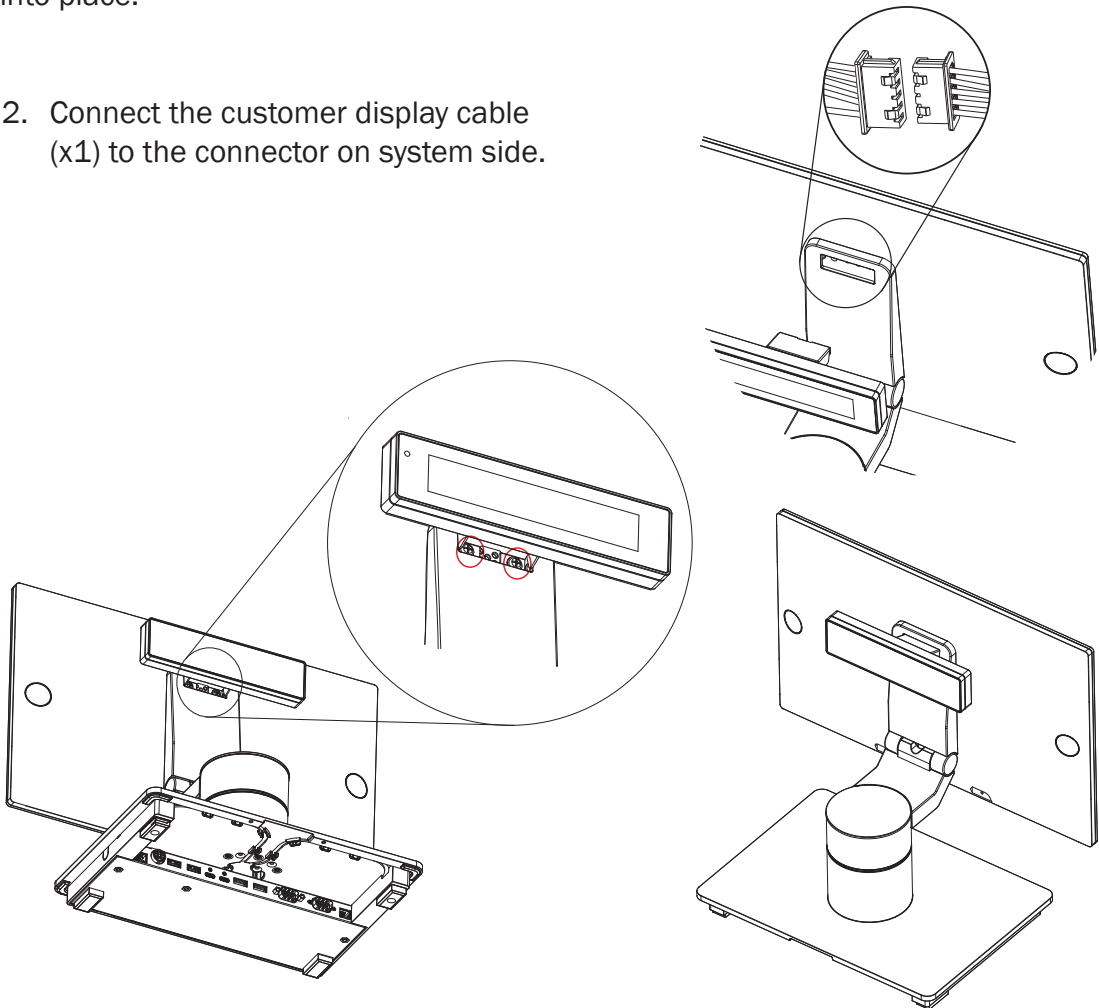


1. To install the customer display, replace the hinge cover with the one which has a opening in the top.

Removing the hinge cover: The cover attaches magnetically to the hinge. Pull the cover upwards and out to release it from the hinge.

Installing the hinge cover: To install the hinge cover, attach the cover and slide it into place.

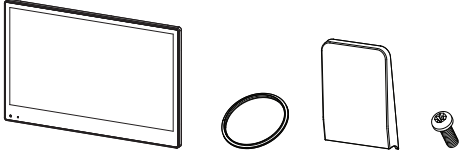
2. Connect the customer display cable (x1) to the connector on system side.



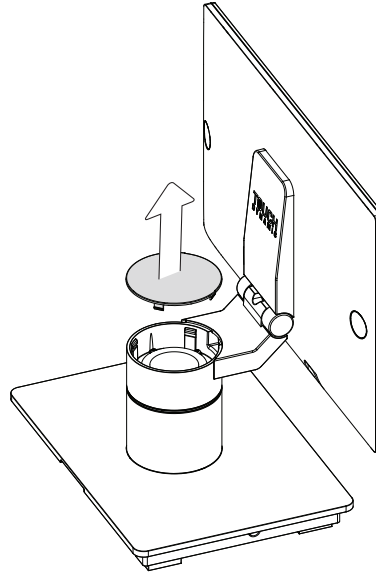
3. Attach the customer display and fasten it into place with the screws (x2) provided.

4-4. Install the Second Display

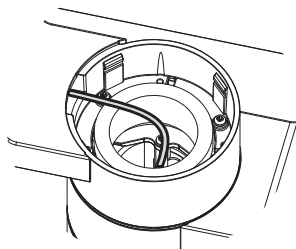
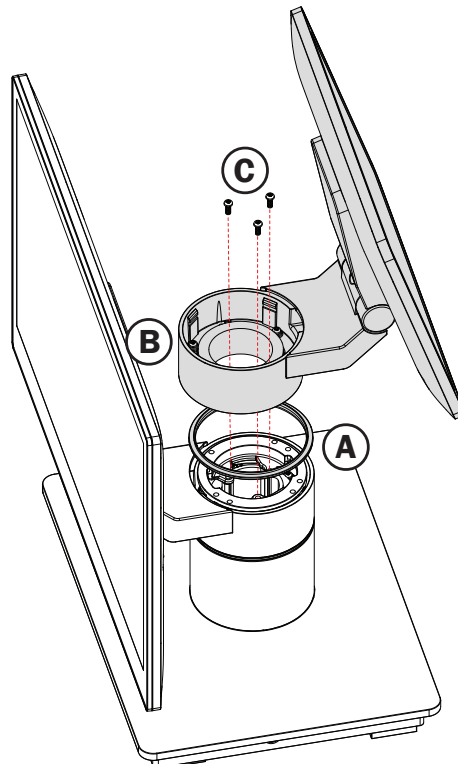
Accessories items

	<ul style="list-style-type: none">a. 11.6" or 15.6" 2nd display moduleb. Plastic frame of the stand armc. Hinge coverd. Screws for 2nd display arm x 3
---	---

1. To install the 2nd display, please open the top cover of the stand arm first.

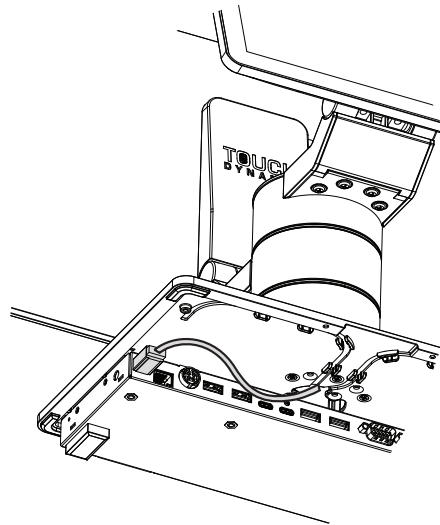


2. Attach the plastic frame to the stand arm until it snaps in place (A).
3. Position and attach the 2nd display module over the plastic frame as shown (B) then fasten with the screws (x3) provided (C).

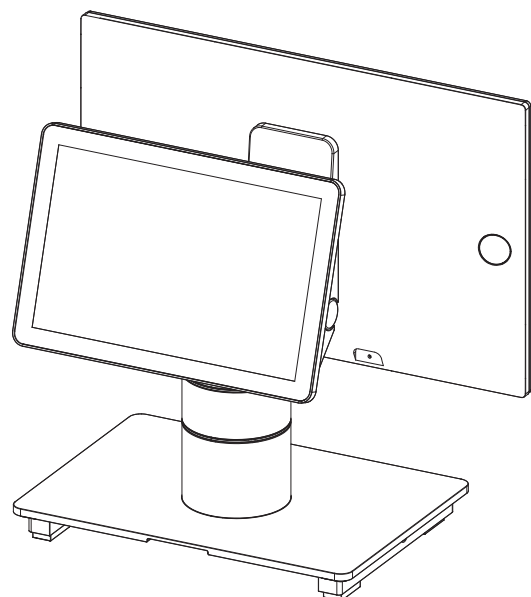
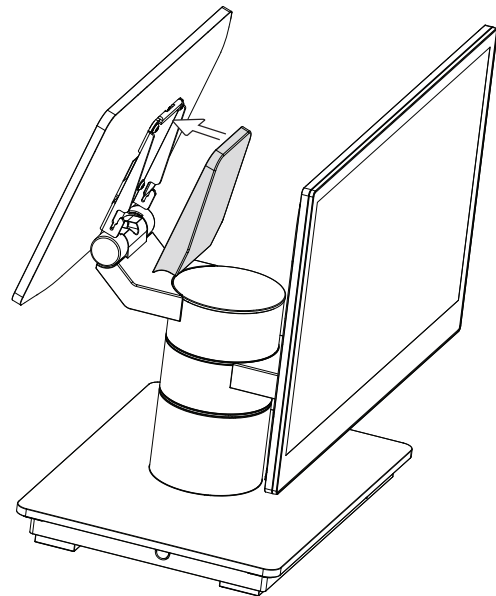


- * **Thread the 2nd display cable through the opening of the stand arm when attaching the module.**

4. Follow steps 1 and 2 described in Chapter 3-2 to release the holder of the system box. Thread the 2nd display cable through the opening and connect the host end of the cable to FeDP port. (refer to Chapter 2-3 a).

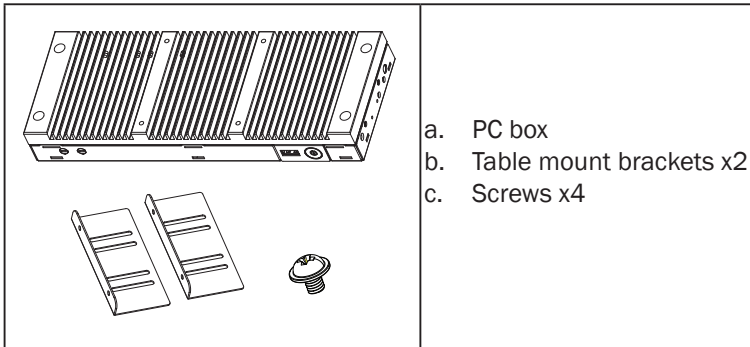


5. Finally attach the hinge cover.

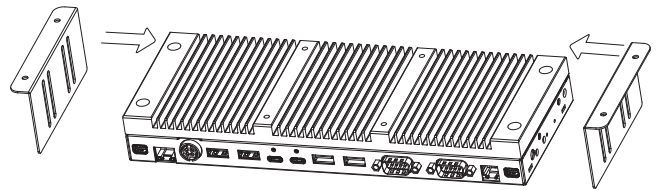


4-5. Install the Table Mount Kits

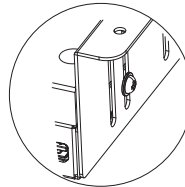
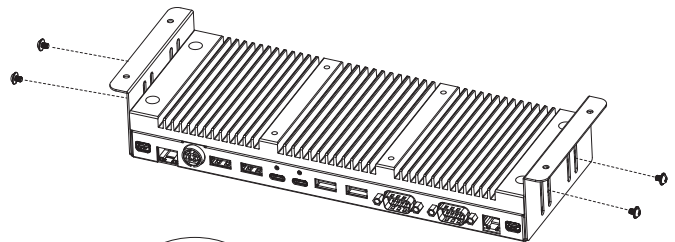
Accessories items



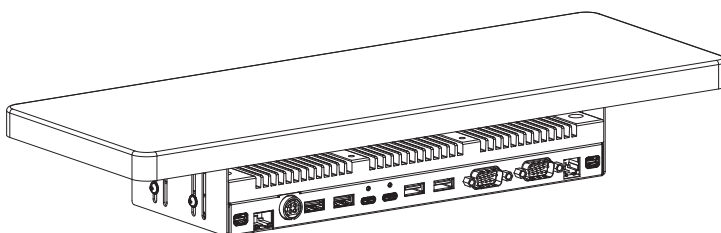
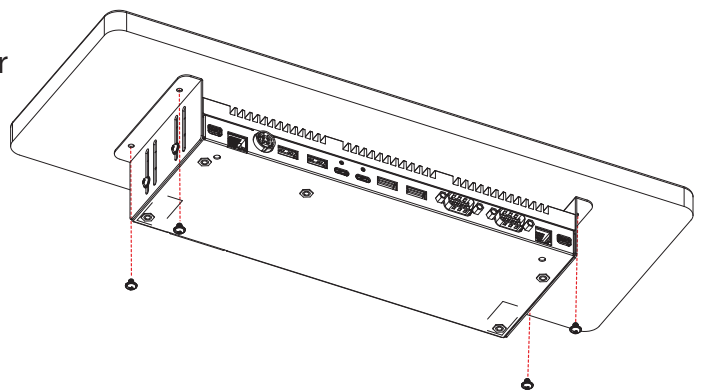
1. Attach the table mount brackets to the right and left sides of the PC box.



2. Insert the thumb screws (x4) through the respective slit of the bracket so as to adjust the height of the PC box.

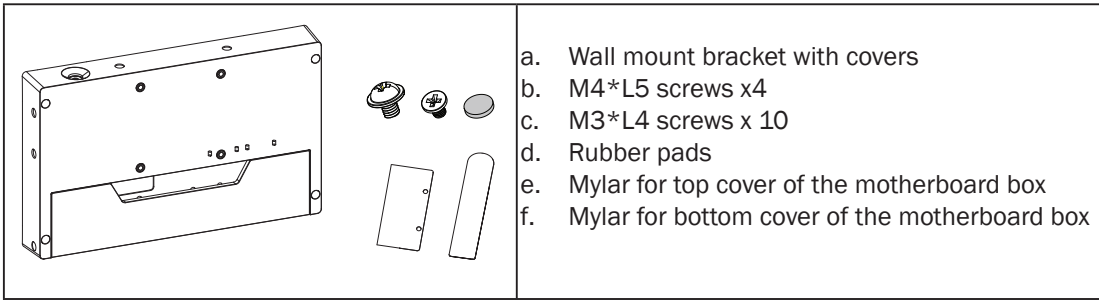


3. Position the table mount kits under the table and fasten with the screws (x4) to secure.

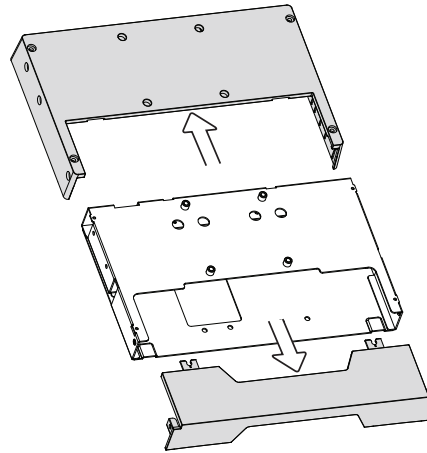


4-6. Install the Wall Mount Kits

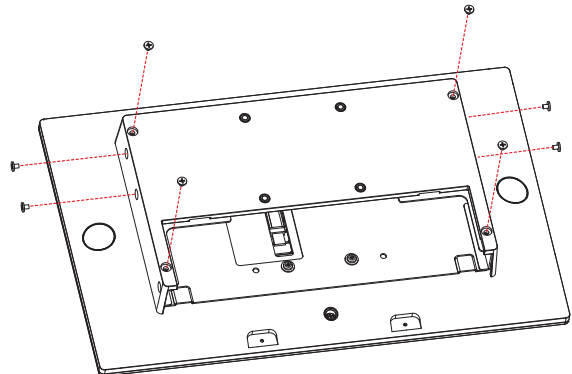
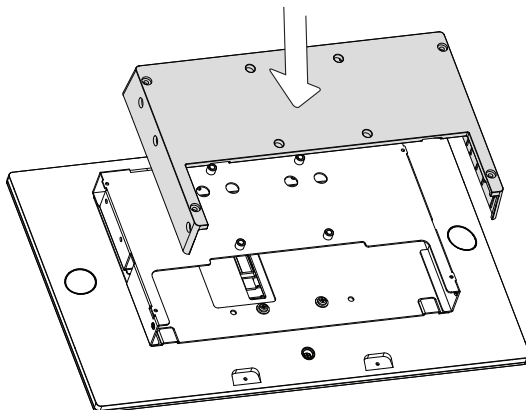
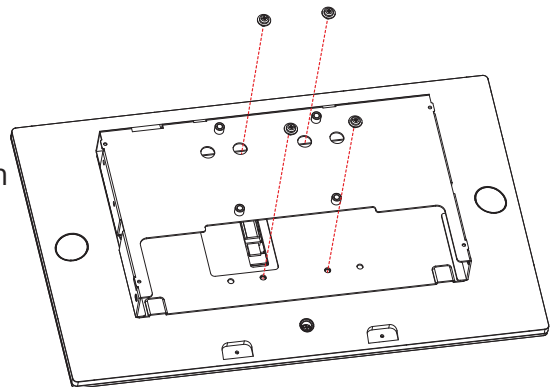
Accessories items



1. Remove the top and cable covers of the wall mount bracket.

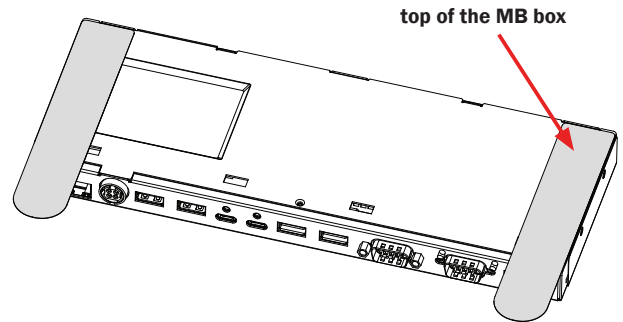
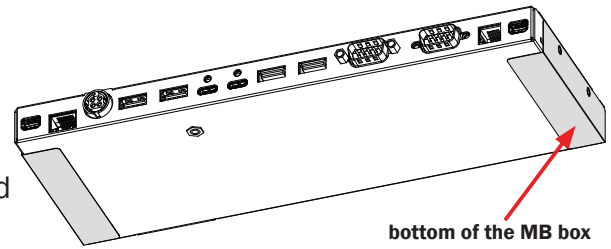


2. To attach the wall mount bracket, place the LCD touch panel face down. Position the bracket over the rear side of the LCD touch panel and fasten with the M4*L5 screws (x4).



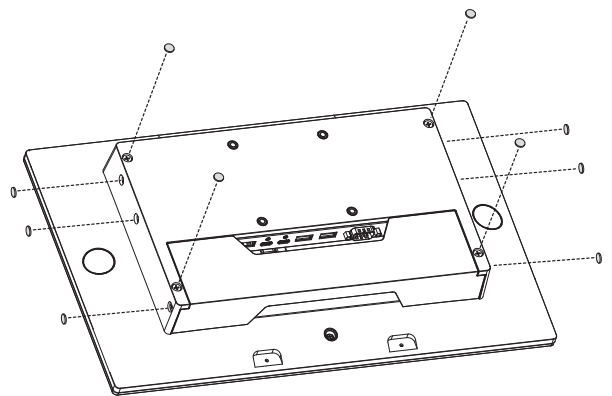
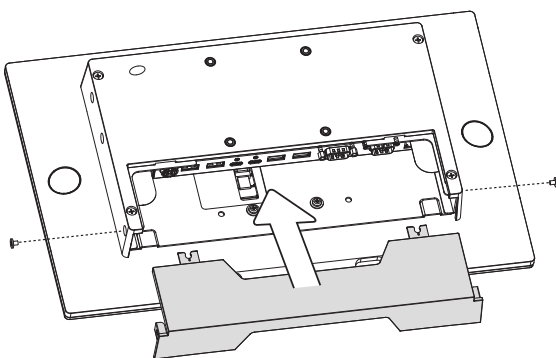
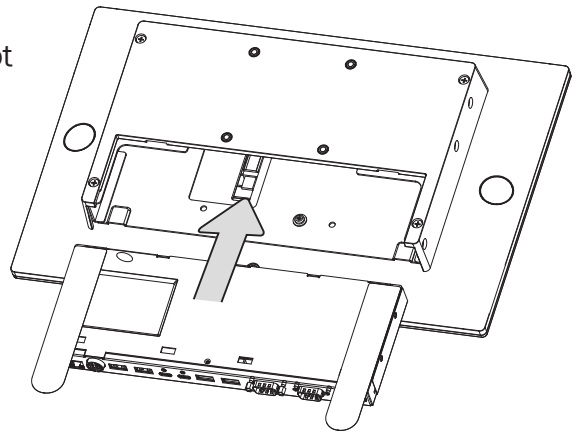
3. Place the top cover of the wall mount bracket back and fasten with the M3*L4 screws (x8).

4. Attach the mylars to the motherboard box as picture shown.



5. Slide the motherboard box into the slot of the wall mount bracket.

** For easier removal of the motherboard box, pull the mylars at the same time.*

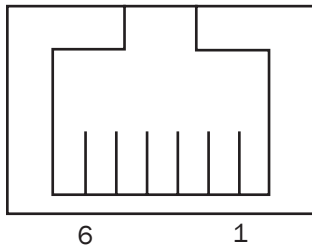


6. Place the cable cover of the wall mount bracket back and fasten with the M3*L4 screws (x2).
7. Finally cover the rubber pads (x10.)

4-7. Cash Drawer Installation

You can install a cash drawer through the cash drawer port. Please verify the pin assignment before installation.

Cash Drawer Pin Assignment



Pin	Signal
1	Cash drawer 2 In
2	Cash drawer 1 Out
3	Cash drawer 1 In
4	12V / 19V
5	Cash drawer 2 Out
6	GND

Cash Drawer Controller Register

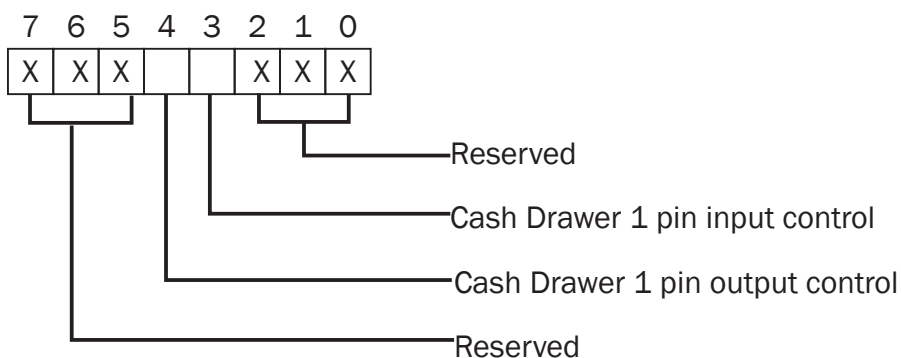
The Cash Drawer Controller use one I/O addresses to control the Cash Drawer.

Register Location: 0x482h

Attribute: Read / Write

Size: 8bit

BIT	BIT7	BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0
Attribute	Reserved			CD1 Out	CD1 In	Reserved		



Bit 7: Reserved
 Bit 6: Reserved
 Bit 5: Reserved
 Bit 4: Cash Drawer 1 pin output control.
 = 1: Opening the Cash Drawer
 = 0: Allow close the Cash Drawer
 Bit 3: Cash Drawer 1 pin input control.
 = 1: the Cash Drawer closed or no Cash Drawer
 = 0: the Cash Drawer opened
 Bit 2: Reserved
 Bit 1: Reserved
 Bit 0: Reserved

Note: Please follow the Cash Drawer control signal design to control the Cash Drawer.

Cash Drawer Control Command Example

Command	Cash Drawer
O 482 10	Opening
O 482 00	Allow to close
<ul style="list-style-type: none"> ▶ Set the I/O address 482h bit4 =1 for opening Cash Drawer by “DOUT bit0” pin control. ▶ Set the I/O address 482h bit4 = 0 for allow close Cash Drawer. 	

Command	Cash Drawer
I 482	Check status
<ul style="list-style-type: none"> ▶ The I/O address 482h bit3 =1 mean the Cash Drawer is opened or not exist. ▶ The I/O address 482h bit3 =0 mean the Cash Drawer is closed. 	

5. Specification

Model Name	Razor		
Mainboard	Whiskey Lake	Android	Elkhart Lake
CPU support	Intel Whiskey Lake U CPU BGA-1528 (14nm) Celeron 4305UE 2GHz, LLC 2M (15W,EIA) i3-8145UE 2.2GHz, LLC 4M (15W,EIA) i5-8365UE 1.6GHz, LLC 6M (15W,EIA)	Qualcomm Snapdragon Snapdragon 450 (MSM8953) 8x ARM Cortex A53, Octa-core 1.8 GHz CPU Snapdragon 660 (TBD) Qualcomm® Kryo™ 260 CPU, Octa-core 2.0 GHz CPU	EIA GT2 CELERON (J6412) 1.8G/3200M 10mm FCBGA (default)
System memory	DDR4 S.O. DIMM x1, 2133 Mhz (32GB Max)	3GB LPDDR3 (450, SNM758L-3308) 4GB LPDDR4 (660, SNM900-6408)	DDR4 S.O. DIMM x1, 2133 Mhz (32GB Max)
Graphic memory	Intel Graphic (Gen 9) DX12, define on CPU	Adreno 506; 650MHz (450) Adreno 512; 850MHz (660)	Intel Graphic (Gen 11), defined on CPU
LCD Touch Panel			
LCD size	15.6" LED (eDP) IPS		
Brightness (cd/m ²)	300 nits		
Maximal resolution	1920 x 1080		
Touch screen type	True-Flat PCAP Touch		
Tilt angle	90°		
Storage			
FlashMemory	M.2 SATA SSD or NVMe SSD	Inside CPU 32GB eMMC (SNM758L-3308) 64GB eMMC (SNM900-6408)	M.2 SATA SSD or NVMe SSD
Expansion			
m.2	1x E-key 2230 for WLAN 2x M-key 2280 for storage	N/A	1x E-key 2230 for WLAN; 1x M-key 2280 for storage
I/O Ports			
Video connected	1x FeDP (proprietary) for main display (2-lane eDP/USB2.0/audio(L-CH)/power button/power) 1x FeDP (proprietary) for the 2 nd display (2-lane eDP/USB2.0/audio(R-CH)/power button/power)		
USB Type A	Rear: 2x USB3.0 / 2x USB2.0 Front: 1x USB2.0		
USB Type C	1 x full-functional, PDO 5V@3A / PDO 12V@1.5A / PDO 20V@1A 1 x data only, PDO 5V@3A / PDO 19V@5A (for Flytech powered USB board, E-Mark required on cable) (90W adapter can not support 19V@5A on this port, 120W will be required)	1 x data only (USB2.0 only) PDO 5V@3A /PDO 12V@1.5A /PDO 19V@5A (for Flytech powered USB board, E-Mark required on cable)	1 x USB2.0/ 3.0 data only (5V only) 1 x USB3.0 data only (5V),PDO 5V@3A / PDO 19V@5A
Serial / COM	2 x DB9 (COM1 / COM2 w/5V/12V powered enabled by BIOS)		
LAN (10/100/1000)	1 x RJ45		
Cash drawer	1 x RJ-11 (2 in 2 out)		
DC jack	1x 4 pin w/ lock		
Micro USB	N/A	1	N/A
Power switch	1		

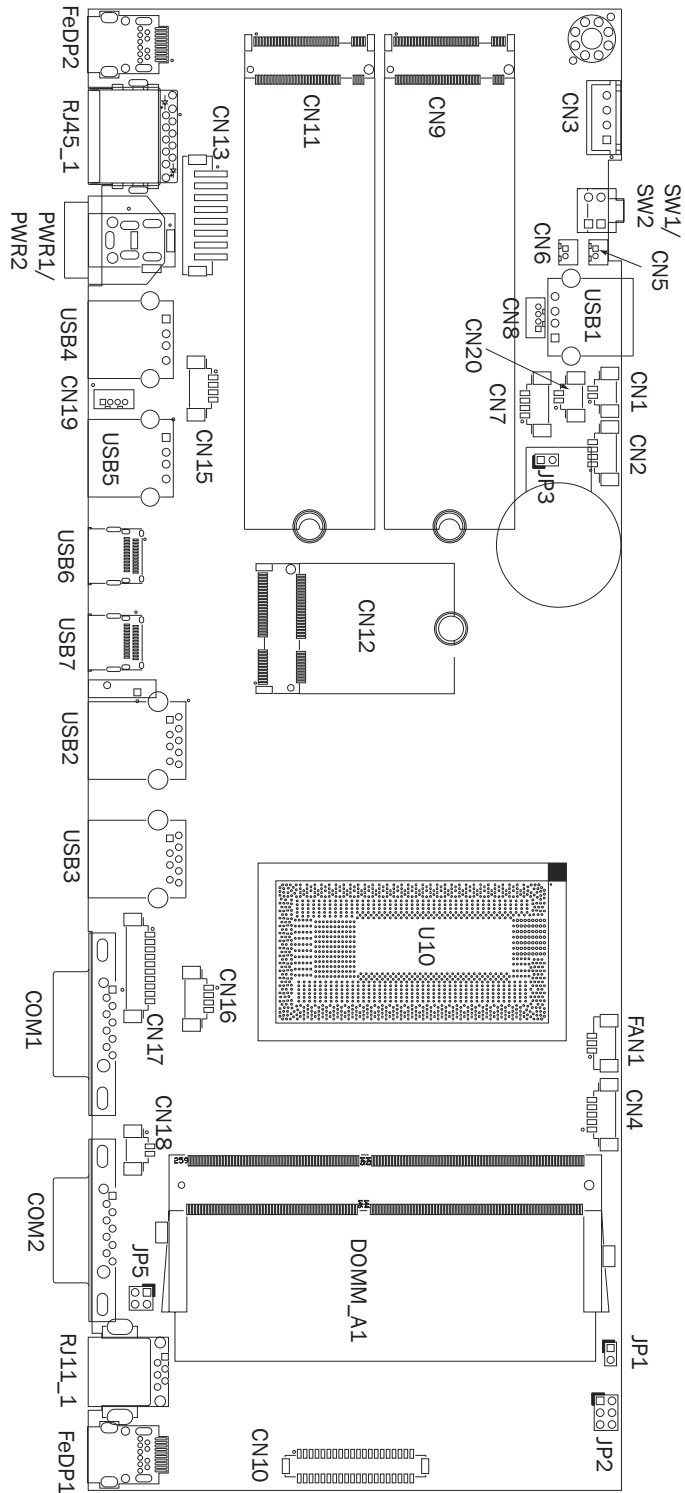
Model Name	Razor		
Mainboard	Whiskey Lake	Android	Elkhart Lake
Power			
Power adapter	19V/120W	19V/65W	
Peripherals (optional)			
MSR	1 (USB)		
Fingerprint	1 (USB)		
2D scanner	1 (USB)		
Second display	11.6" or 15.6" 2 nd display (touch option)		
Customer display	LCM		
Speaker	1 x 3W		
Control/Indicator			
Power button	1 on the stand box (@front)		
Power LED	1 (Blue) on the touch screen 1 (Blue) on the power button at the front of the stand box		
Certificate			
EMC & Safety	FCC, Class A, CE, LVD		
ESD	4 kV Contact discharge, 8 kV Air discharge		
Color	Black		
Environment			
Sealing	IP54 (front side)		
Operating temperature	0 °C ~ 35 °C (32 °F ~ 95 °F)		
Storage temperature	-20 °C ~ 60 °C (-4 °F ~ 140 °F)		
Humidity	20% ~ 85% RH non-condensing		
Dimension (W x D x H)	Display: 375.8 x 18.0(center)/7.0(edge) x 237.2 (mm)		
	PC Box: 260 x 94.1 x 19 (mm) (w/o rubber feet)		
	Plate: 280 x 200 x 6 (mm) (w/o rubber feet)		
OS supported	Windows IOT enterprise 10 (64-bit), Windows 11, Linux	Q450 Android 9.0 Q660 Android 10	Windows IOT enterprise 10 (64-bit), Windows 11, Linux

* This specification is subject to change without prior notice.

6. Configuration

6-1. Whiskey Lake Motherboard

6-1-1. Motherboard Layout



6-1-2. Connectors & Functions

Connector	Function
CN1	Speaker R output
CN2	S0/S5 LED & power button connector
CN3	SATA power connector
CN4	EC Debug
CN6	RTC battery connector
CN7	Earphone connector
CN8/CN15/CN16/CN19	Internal USB connector
CN9/CN11	M.2 M-KEY PCIE/ SATA connector
CN10	Internal eDP connector
CN12	M.2 E-KEY WIFI connector
CN13	Wide range & power connector
CN15	Speaker L output
CN18	Storage LED connector
CN20	Mic-out connector
PWR1/PWR2	DC jack (2pin/4pin)
RJ11_1	Cash drawer connector
RJ45_1	LAN connector
SW1/SW2	Power button
DIMM_A1	DDR4 SO-DIMM
FAN1	CPU FAN connector
FeDP1	FeDP main display connector
FeDP2	FeDP 2 nd display connector
USB1/USB4/USB5	USB2.0 connector
USB2/USB3	USB3.0 connector
USB6	USB-C full function connector
USB7	USB-C data only connector
COM1/COM2	COM port connector
COM3(CN17)	Internal COM port connector
JP2	Speaker watt setting
JP3	Audio Line-out setting
JP5	Cash drawer power setting
JP2 (1-2)(3-4)	Speaker cable setting

6-1-3. Jumper Setting

Audio Line-out Setting

Function	JP3		
▲ Stereo	<table border="1"> <tr><td>1</td></tr> <tr><td>2</td></tr> </table>	1	2
1			
2			
Reserved (line-out)	<table border="1"> <tr><td>1</td></tr> <tr><td>2</td></tr> </table>	1	2
1			
2			

Cash Drawer Power Setting

Function	JP5				
▲ +19V	<table border="1"> <tr><td>1</td><td>3</td></tr> <tr><td>2</td><td>4</td></tr> </table>	1	3	2	4
1	3				
2	4				
+12V	<table border="1"> <tr><td>1</td><td>3</td></tr> <tr><td>2</td><td>4</td></tr> </table>	1	3	2	4
1	3				
2	4				

Speaker Watt Setting

Function	JP2						
2W	<table border="1"> <tr><td>1</td><td>3</td><td>5</td></tr> <tr><td>2</td><td>4</td><td>6</td></tr> </table>	1	3	5	2	4	6
1	3	5					
2	4	6					
▲ 3W	<table border="1"> <tr><td>1</td><td>3</td><td>5</td></tr> <tr><td>2</td><td>4</td><td>6</td></tr> </table>	1	3	5	2	4	6
1	3	5					
2	4	6					

Speaker Cable Setting

Function	JP2				
▲ L=0.46m~2m (2W)	<table border="1"> <tr><td>1</td><td>3</td></tr> <tr><td>2</td><td>4</td></tr> </table>	1	3	2	4
1	3				
2	4				
M/B (2W)	<table border="1"> <tr><td>1</td><td>3</td></tr> <tr><td>2</td><td>4</td></tr> </table>	1	3	2	4
1	3				
2	4				
L=0.46m~2m (3W)	<table border="1"> <tr><td>1</td><td>3</td></tr> <tr><td>2</td><td>4</td></tr> </table>	1	3	2	4
1	3				
2	4				
M/B (3W)	<table border="1"> <tr><td>1</td><td>3</td></tr> <tr><td>2</td><td>4</td></tr> </table>	1	3	2	4
1	3				
2	4				

LCD ID Setting

To set the panel ID, please insert the jumper on the FeDP to LVDS board.

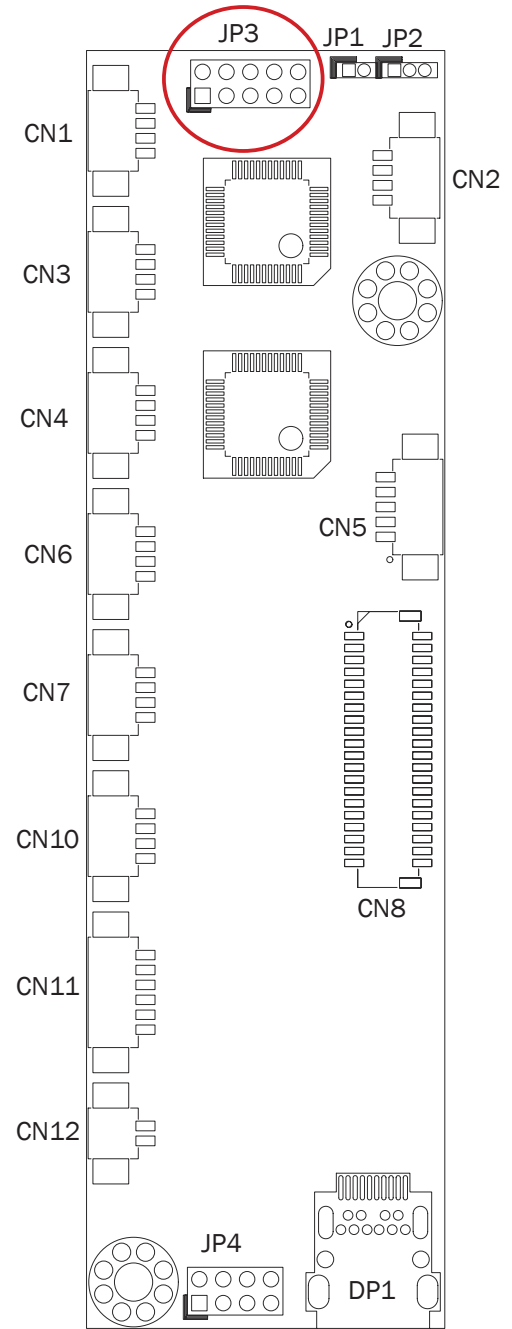
Panel#	Resolution	JP3										
0	Reserved	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
1	800 x 600	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
2	800 x 600	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
3	1024 x 768	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
4	1024 x 768	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
5	1366 x 768	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
6	1366 x 768	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
7	1024 x 600	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
8	1280 x 1024	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
9	1440 x 900	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
15	1920 x 1080	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								

1
2

 Jumper open

1
2

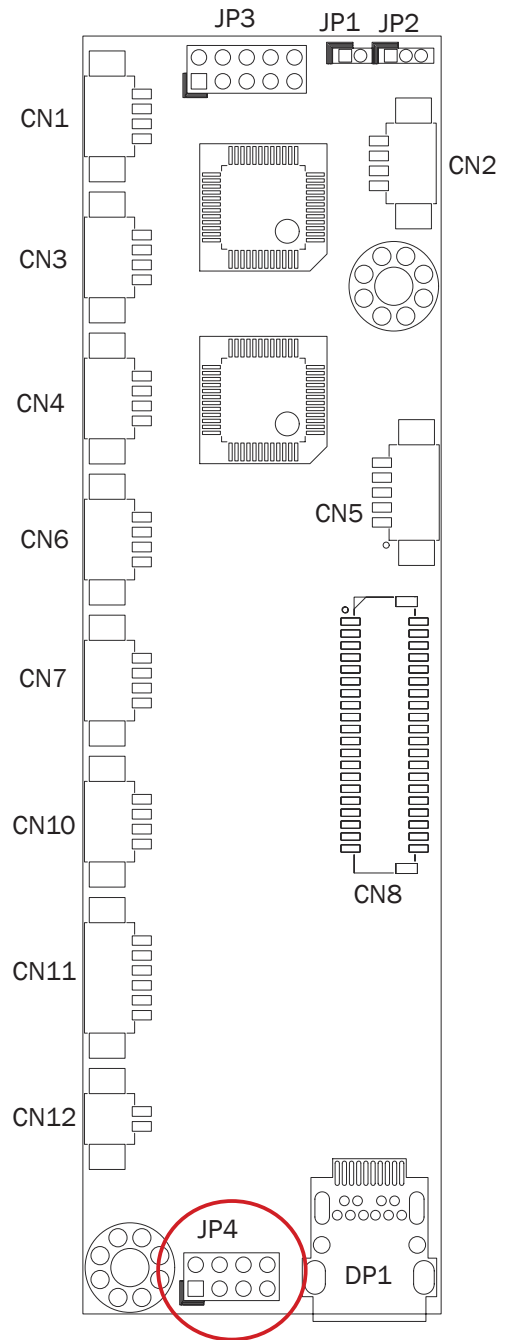
 Jumper short



Panel Backlight Current Setting

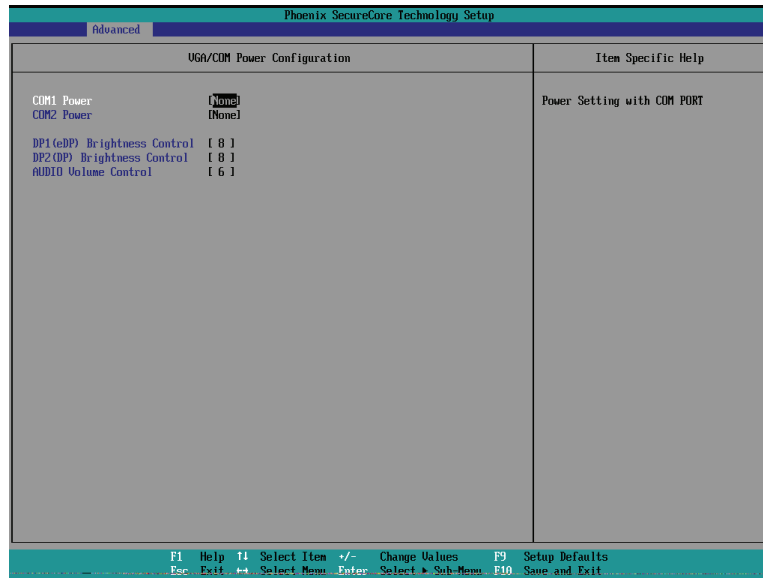
LED current	JP4
200mA	1 3 5 7 2 4 6 8
240mA	1 3 5 7 2 4 6 8
280mA	1 3 5 7 2 4 6 8
320mA	1 3 5 7 2 4 6 8
360mA	1 3 5 7 2 4 6 8
400mA	1 3 5 7 2 4 6 8
420mA	1 3 5 7 2 4 6 8
460mA	1 3 5 7 2 4 6 8
500mA	1 3 5 7 2 4 6 8

1 Jumper open 1 Jumper short
2 Jumper open 2 Jumper short



COM1/COM2 Power Setting

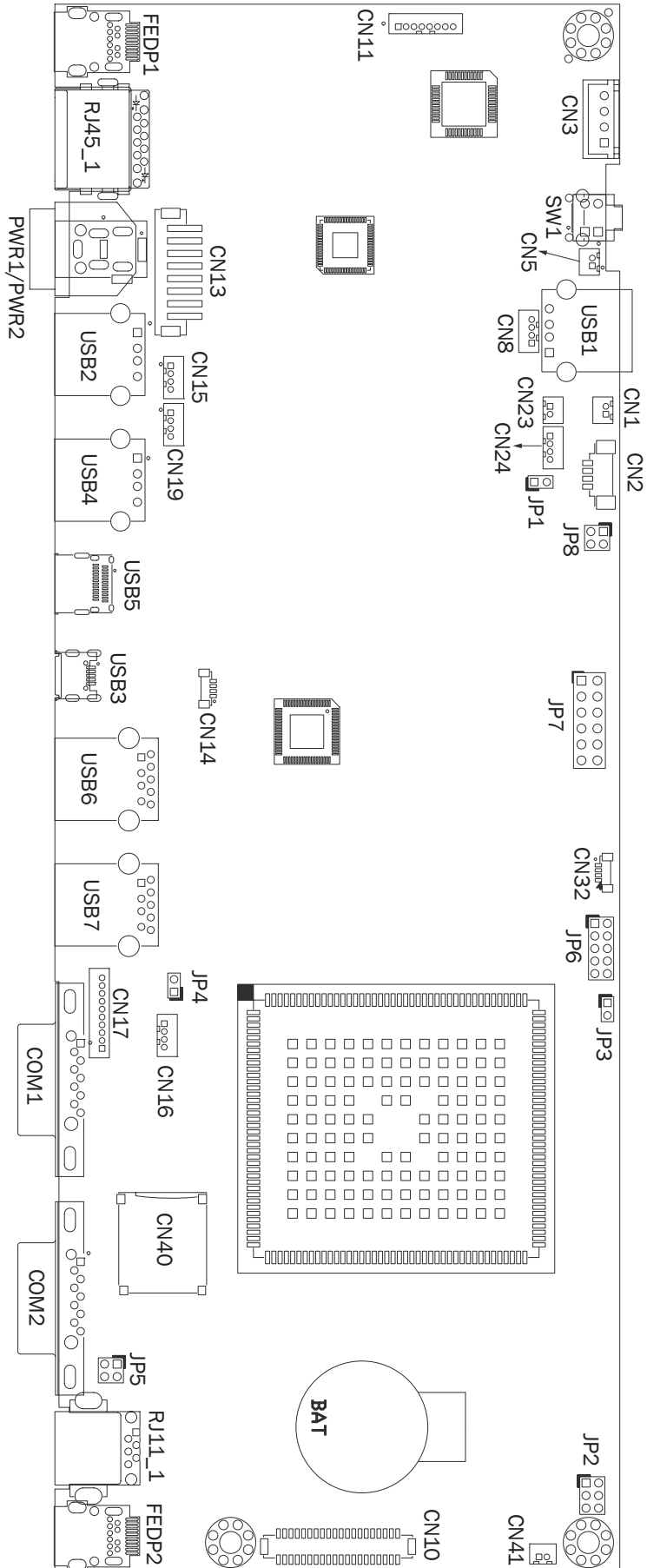
COM1, COM2 can be set to provide power to your serial device.
The voltage can be set to +5V or +12V in the BIOS.



1. Power on the system, and press the key when the system is booting up to enter the BIOS Setup utility.
2. Select the Advanced tab.
3. Select **VGA/COM Power Configuration** Ports and press <Enter> to go to display the available options.
4. To enable the power, select COM1 ,COM2 Power setting and press <Enter>. Select Power and press <Enter>. Save the change by pressing F10.

6-2. Android Motherboard

6-2-1. Motherboard Layout



6-2-2. Connectors & Functions

Connector	Function
CN1	Speaker R connector
CN2	4 pin power button w/2 LED
CN3	SATA power connector
CN5	Speaker L connector
CN10	40 pin eDP connector
CN11	MCU debug connector
CN13	Wide range connector
CN15/16/19	Internal USB connector
CN17	COM3 connector
CN18	WIFI 5G connector
CN21	WIFI 2.4G connector
CN23	Analog Mic in connector
CN24	Line out connector
CN32	Digital mic connector
CN40	Micro SD card connector
CN41	RTC battery
PWR1	DC Jack (2 pin) connector
PWR2	DC Jack (4 pin) connector
RJ11_1	Cash drawer connector
RJ45_1	LAN connector
USB1/CN8	USB 2.0 connector (front USB, option)
USB2/USB4	USB 2.0 connector
USB3	System USB debug connector
USB5	USB type C
USB6/USB7	USB 3.0 connector
FeDP1	Main display connector
FeDP2	2 nd display connector
SW1	Power button w/LED
COM1/COM2	RS-232 connector
JP1	Speaker R/L setting
JP2	Speaker watt setting
JP5	Cash drawer power setting
JP8	PoE watt setting

6-2-3. Jumper Setting

Speaker R/L Setting

Function	JP1
R/L separated (two speakers)	<div style="border: 1px solid black; padding: 2px; display: inline-block;">1</div> 2
▲ R/L mix(single speaker)	<div style="border: 1px solid black; padding: 2px; display: inline-block;">1</div> 2

Speaker Watt Setting

Function	JP2
▲ with FeDP cable	1 3 5 2 4 6
without FeDP cable	<div style="border: 1px solid black; padding: 2px; display: inline-block;">1</div> 3 5 <div style="border: 1px solid black; padding: 2px; display: inline-block;">2</div> 4 6

Cash Drawer Power Setting

Function	JP5
+12V	<div style="border: 1px solid black; padding: 2px; display: inline-block;">1</div> 3 <div style="border: 1px solid black; padding: 2px; display: inline-block;">2</div> 4
▲ +19V	1 <div style="border: 1px solid black; padding: 2px; display: inline-block;">3</div> 2 <div style="border: 1px solid black; padding: 2px; display: inline-block;">4</div>

PoE Watt Setting

Function	JP8
▲ 40W	1 3 2 4
51W	<div style="border: 1px solid black; padding: 2px; display: inline-block;">1</div> 3 <div style="border: 1px solid black; padding: 2px; display: inline-block;">2</div> 4
62W	1 <div style="border: 1px solid black; padding: 2px; display: inline-block;">3</div> 2 <div style="border: 1px solid black; padding: 2px; display: inline-block;">4</div>

1

2

 Jumper open

1

2

 Jumper short

▲ = Manufacturer Default Setting

LCD ID Setting

To set the panel ID, please insert the jumper on the FeDP to LVDS board.

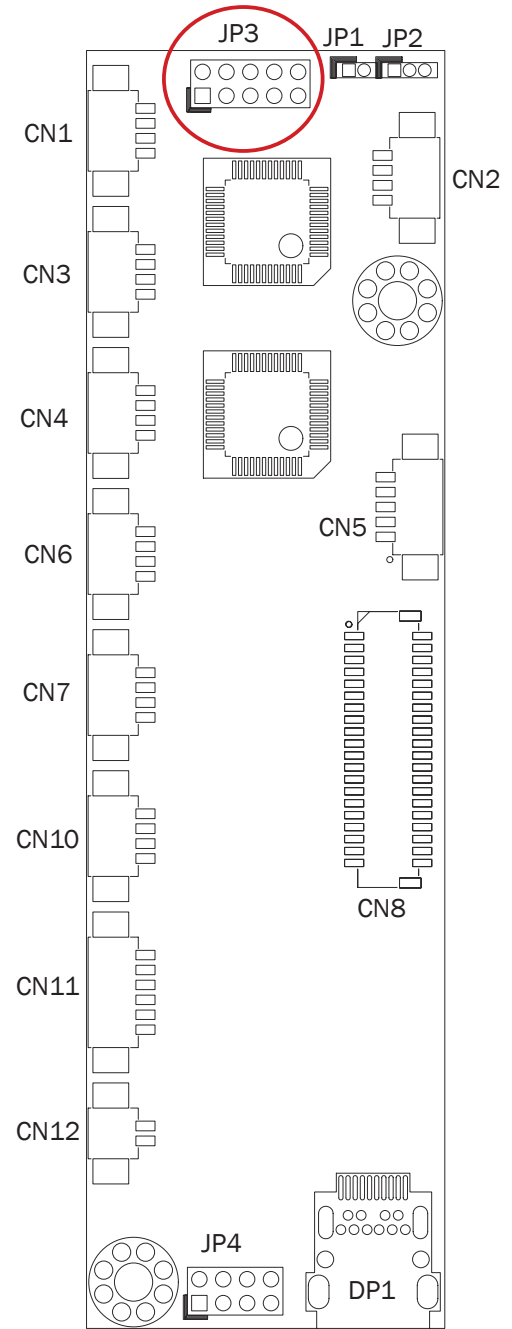
Panel#	Resolution	JP3										
0	Reserved	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
1	800 x 600	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
2	800 x 600	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
3	1024 x 768	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
4	1024 x 768	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
5	1366 x 768	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
6	1366 x 768	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
7	1024 x 600	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
8	1280 x 1024	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
9	1440 x 900	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
15	1920 x 1080	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								

1
2

 Jumper open

1
2

 Jumper short



Panel Backlight Current Setting

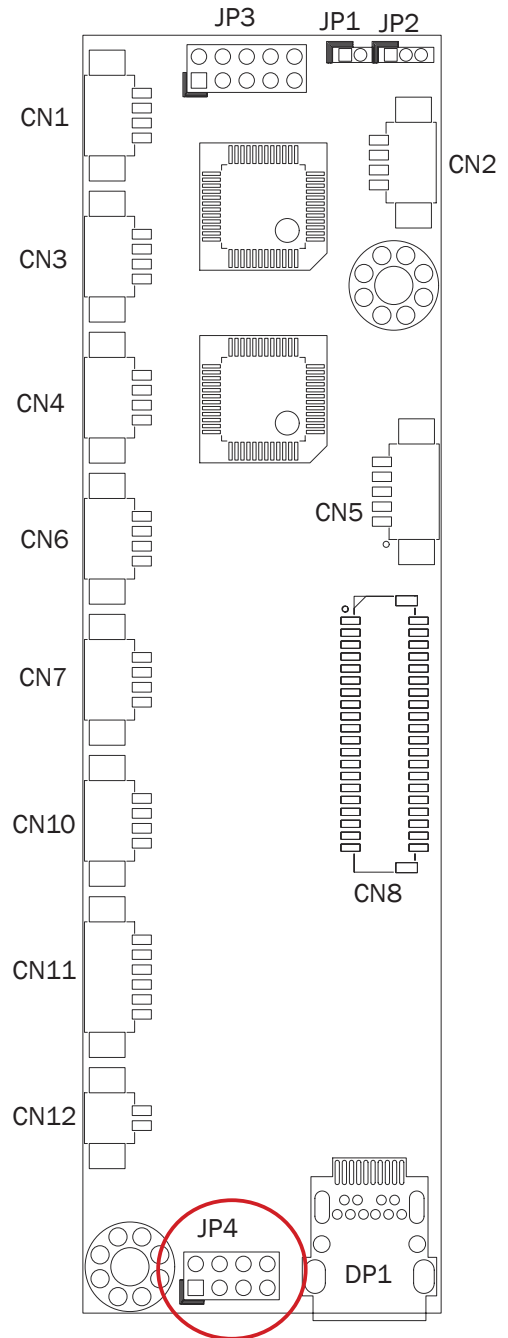
LED current	JP4								
200mA	<table border="1"> <tr> <td>1</td> <td>3</td> <td>5</td> <td>7</td> </tr> <tr> <td>2</td> <td>4</td> <td>6</td> <td>8</td> </tr> </table>	1	3	5	7	2	4	6	8
1	3	5	7						
2	4	6	8						
240mA	<table border="1"> <tr> <td>1</td> <td>3</td> <td>5</td> <td>7</td> </tr> <tr> <td>2</td> <td>4</td> <td>6</td> <td>8</td> </tr> </table>	1	3	5	7	2	4	6	8
1	3	5	7						
2	4	6	8						
280mA	<table border="1"> <tr> <td>1</td> <td>3</td> <td>5</td> <td>7</td> </tr> <tr> <td>2</td> <td>4</td> <td>6</td> <td>8</td> </tr> </table>	1	3	5	7	2	4	6	8
1	3	5	7						
2	4	6	8						
320mA	<table border="1"> <tr> <td>1</td> <td>3</td> <td>5</td> <td>7</td> </tr> <tr> <td>2</td> <td>4</td> <td>6</td> <td>8</td> </tr> </table>	1	3	5	7	2	4	6	8
1	3	5	7						
2	4	6	8						
360mA	<table border="1"> <tr> <td>1</td> <td>3</td> <td>5</td> <td>7</td> </tr> <tr> <td>2</td> <td>4</td> <td>6</td> <td>8</td> </tr> </table>	1	3	5	7	2	4	6	8
1	3	5	7						
2	4	6	8						
400mA	<table border="1"> <tr> <td>1</td> <td>3</td> <td>5</td> <td>7</td> </tr> <tr> <td>2</td> <td>4</td> <td>6</td> <td>8</td> </tr> </table>	1	3	5	7	2	4	6	8
1	3	5	7						
2	4	6	8						
420mA	<table border="1"> <tr> <td>1</td> <td>3</td> <td>5</td> <td>7</td> </tr> <tr> <td>2</td> <td>4</td> <td>6</td> <td>8</td> </tr> </table>	1	3	5	7	2	4	6	8
1	3	5	7						
2	4	6	8						
460mA	<table border="1"> <tr> <td>1</td> <td>3</td> <td>5</td> <td>7</td> </tr> <tr> <td>2</td> <td>4</td> <td>6</td> <td>8</td> </tr> </table>	1	3	5	7	2	4	6	8
1	3	5	7						
2	4	6	8						
500mA	<table border="1"> <tr> <td>1</td> <td>3</td> <td>5</td> <td>7</td> </tr> <tr> <td>2</td> <td>4</td> <td>6</td> <td>8</td> </tr> </table>	1	3	5	7	2	4	6	8
1	3	5	7						
2	4	6	8						

1
2

 Jumper open

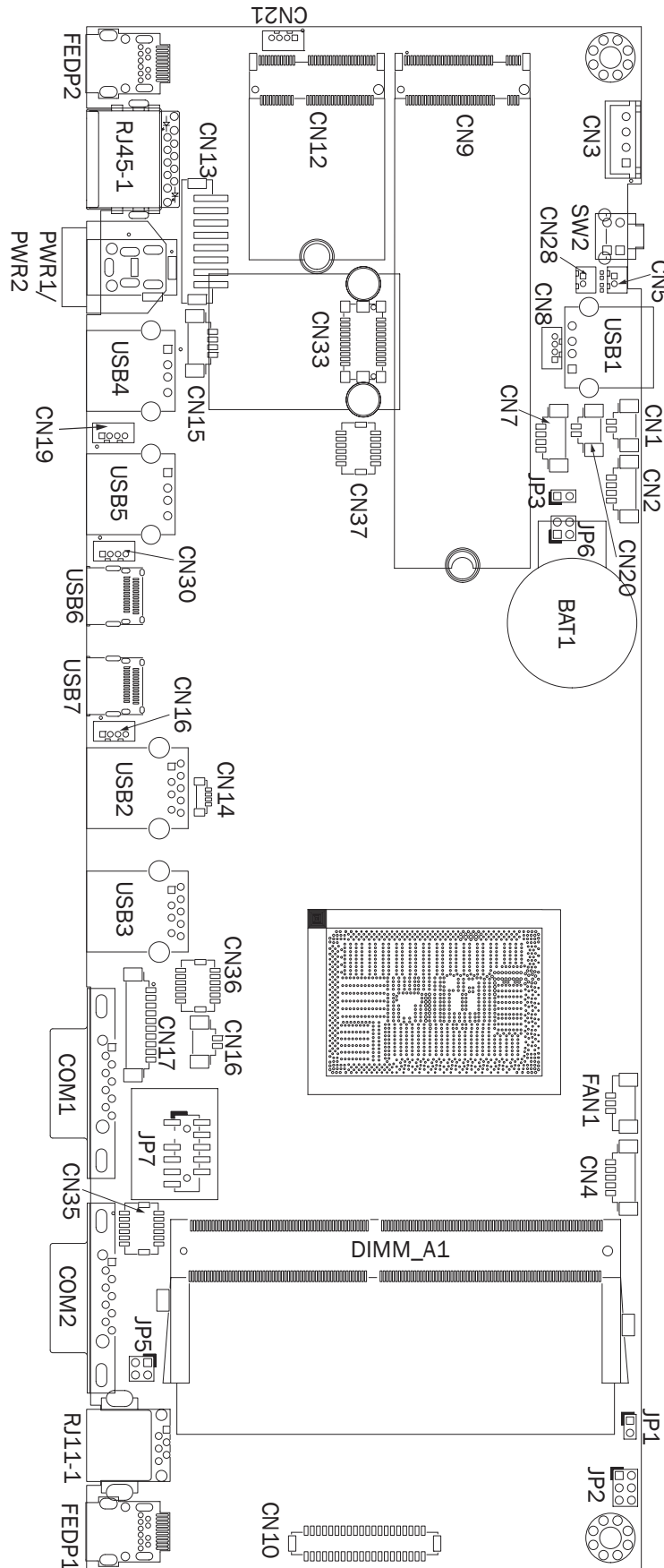
1
2

 Jumper short



6-3. Elkhart Lake Motherboard

6-3-1. Motherboard Layout



6-3-2. Connectors & Functions

Connector	Function
CN1	Speaker R connector
CN2	4 pin power button w/2 LED
CN3	SATA power connector
CN4	EC Debug
CN5	Speaker L connector
CN7	Line out connector
CN8/CN15/CN16/CN19/ CN30	Internal USB connector
CN9	M.2 WiFi Key E
CN10	40 pin eDP connector
CN12	M.2 SSD Key M (PCIe GEN3)
CN13	Wide range & power connector
CN17	COM connector
CN18	Storage LED connector
CN20	Mic connector
CN21	Internal USB 2.0 to WiFi USB
CN28	RTC battery
CN33	OOB BD connector
CN35	USB to COM1/2 (option)
CN36	USB to COM3(option)
CN37	USB to LAN (option)
PWR1/PWR2	DC jack (2pin/4pin)
RJ11_1	Cash drawer connector
RJ45_1	LAN connector
SW1/SW2	Power button w/LED
DIMM_A1	DDR4 SO-DIMM
FAN1	CPU FAN connector
FeDP1	Main display connector
FeDP2	2 nd display connector
USB1/CN8	USB 2.0 connector (front USB, option)
USB2/USB3	USB3.0 connector
USB4/USB5	USB2.0 connector
USB6	USB-C data only connector (USB3.0/2.0)
USB7	USB-C data only connector (USB2.0)
COM1/COM2	COM port connector
JP2	Speaker watt setting
JP3	Audio Line out setting
JP5	Cash drawer power setting
JP7	TPM BD connector

6-3-3. Jumper Setting

Speaker Watt Setting

Function	JP2
▲ L=0.46m~2.0m (2W)	1 3 2 4
on M/B (2W)	<input type="checkbox"/> 1 3 <input type="checkbox"/> 2 4
L=0.46m~2.0m (3W)	1 <input type="checkbox"/> 3 2 <input type="checkbox"/> 4
on M/B (3W)	<input type="checkbox"/> 1 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 4

Audio Line-out Setting

Function	JP3
▲ Stereo	<input type="checkbox"/> 1 <input type="checkbox"/> 2
Reserved (line-out)	<input type="checkbox"/> 1 <input type="checkbox"/> 2

Cash Drawer Power Setting

Function	JP5
▲ +19V	<input type="checkbox"/> 1 3 <input type="checkbox"/> 2 4
+12V	1 <input type="checkbox"/> 3 2 <input type="checkbox"/> 4

▲ = Manufacturer Default Setting

1 Jumper open 1 Jumper short
 2 Jumper open 2 Jumper short

LCD ID Setting

To set the panel ID, please insert the jumper on the FeDP to LVDS board.

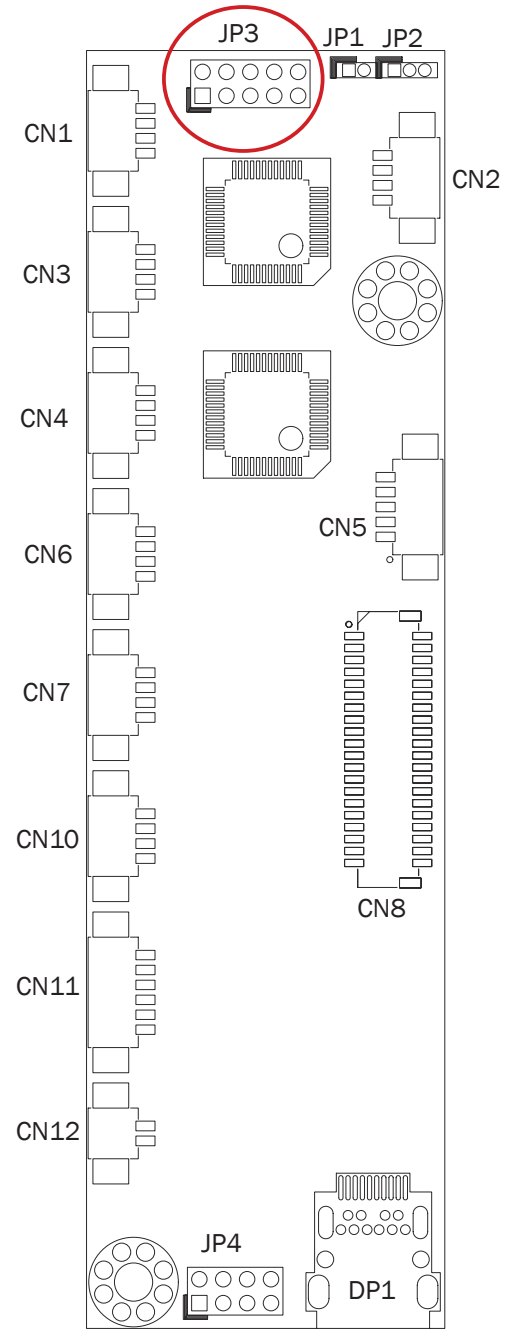
Panel#	Resolution	JP3										
0	Reserved	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
1	800 x 600	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
2	800 x 600	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
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3	1024 x 768	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
4	1024 x 768	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
5	1366 x 768	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
6	1366 x 768	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
7	1024 x 600	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
8	1280 x 1024	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
9	1440 x 900	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								
15	1920 x 1080	<table border="1"> <tr><td>1</td><td>3</td><td>5</td><td>7</td><td>9</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr> </table>	1	3	5	7	9	2	4	6	8	10
1	3	5	7	9								
2	4	6	8	10								

1
2

 Jumper open

1
2

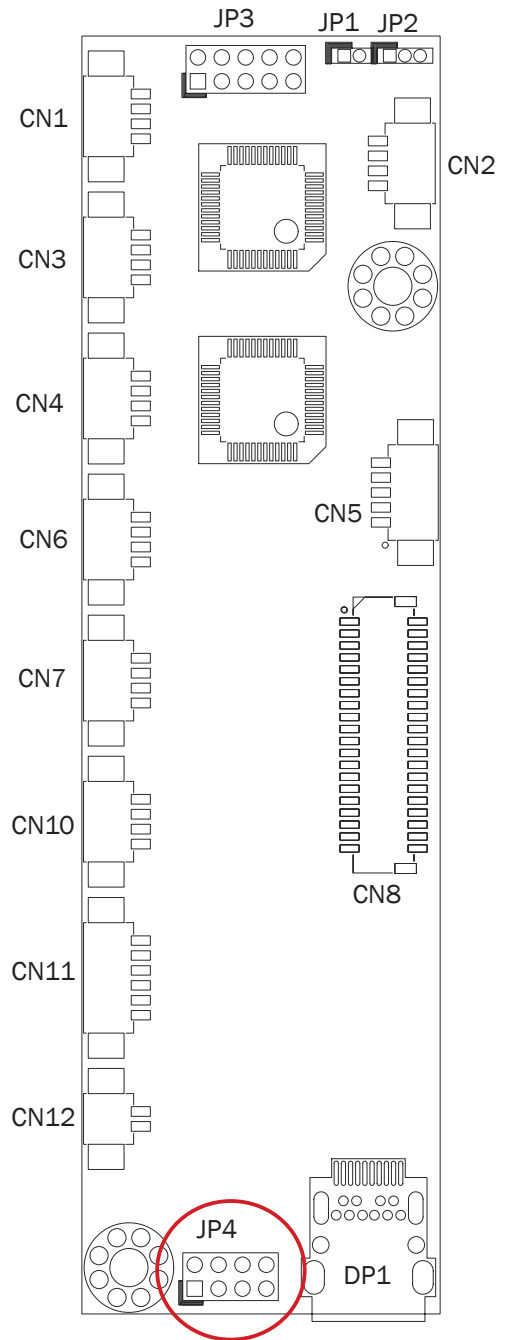
 Jumper short



Panel Backlight Current Setting

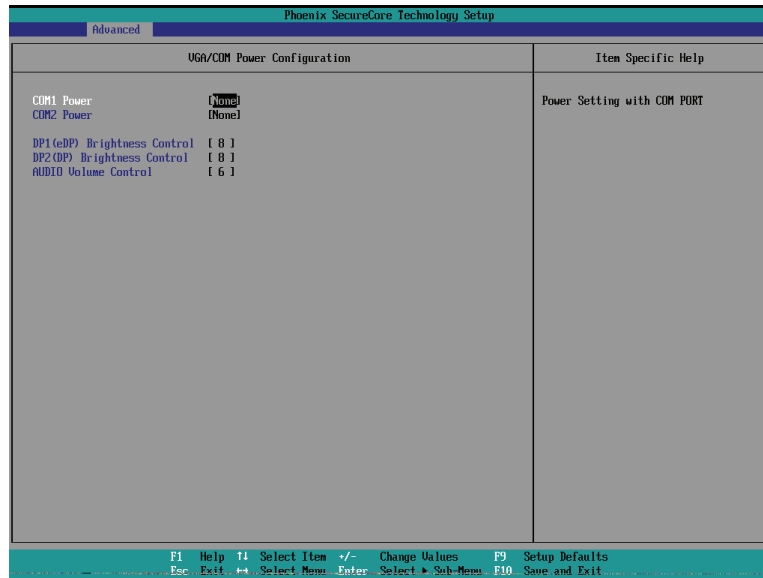
LED current	JP4
200mA	1 3 5 7 2 4 6 8
240mA	1 3 5 7 2 4 6 8
280mA	1 3 5 7 2 4 6 8
320mA	1 3 5 7 2 4 6 8
360mA	1 3 5 7 2 4 6 8
400mA	1 3 5 7 2 4 6 8
420mA	1 3 5 7 2 4 6 8
460mA	1 3 5 7 2 4 6 8
500mA	1 3 5 7 2 4 6 8

1 Jumper open 1
2 Jumper open 2 Jumper short



COM1/COM2 Power Setting

COM1, COM2 can be set to provide power to your serial device.
The voltage can be set to +5V or +12V in the BIOS.



1. Power on the system, and press the key when the system is booting up to enter the BIOS Setup utility.
2. Select the Advanced tab.
3. Select **VGA/COM Power Configuration** Ports and press <Enter> to go to display the available options.
4. To enable the power, select COM1 ,COM2 Power setting and press <Enter>. Select Power and press <Enter>. Save the change by pressing F10.