RIVAR-1501

15.6” POS Terminal with Intel® Apollo Lake N3350 1.10 GHz

Quick Reference Guide

1st Ed – 04 November 2020

Part No. E2017R510A0R

FCC Statement

THIS DEVICE COMPLIES WITH PART 15 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.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" 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 COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTATLLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

A Message to the Customer

Avalue Customer Services

Each and every Avalue's product is built to the most exacting specifications to ensure reliable performance in the harsh and demanding conditions typical of industrial environments. Whether your new Avalue device is destined for the laboratory or the factory floor, you can be assured that your product will provide the reliability and ease of operation for which the name Avalue has come to be known.

Your satisfaction is our primary concern. Here is a guide to Avalue's customer services. To ensure you get the full benefit of our services, please follow the instructions below carefully.

Technical Support

We want you to get the maximum performance from your products. So if you run into technical difficulties, we are here to help. For the most frequently asked questions, you can easily find answers in your product documentation. These answers are normally a lot more detailed than the ones we can give over the phone. So please consult the user's manual first.

To receive the latest version of the user's manual; please visit our Web site at:
http://www.avalue.com.tw/

Content

1. Getting Started

1.1 Safety Precautions

Warning!

Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution!

Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

1.2 Packing List

- 1 x RIVAR-1501
- 1 x Power Adapter
- 1 x Power Cord
- 2 x COM Cable
- 1 x SD slot cover
- 2 x Screw M3x5mm for SD slot cover

If any of the above items is damaged or missing, contact your retailer.

1.3 System Specifications

Component	
Mother Board	Intel® Celeron® Apollo Lake Platform
CPU	Intel® Celeron® Processor N3350
CPU Cooler (Type)	Fanless
Memory	Default 1 x 204-pin SODIMM Socket with 4GB DDR3L Optional to 8GB
Adapter	DC 24V power input by DC Plug 60W or 120W
System Fan	Fanless
Speaker	Speaker 2W x2 on back
Camera	Supported optional
Wireless LAN	Supported optional (M.2 E key slot)
Bluetooth	Supported optional (M.2 E key slot)
Operating System	Windows 10 64bit, Android 8.1
MSR	Supported optional
RFID	Supported optional
Thermal Printer	SEIKO thermal printer CAPD347D-E PP-802 printer control board HPRT printer control board
Storage	
Other Storage Device	1 x mSATA by M.2 B key slot optional 1 x SD Card slot
Panel	
Main LCD Panel	15.6” 1920 x 1080 Full HD INNOLUX N156HCA-EA1 300nits
2nd LCD Panel	15.6” 1920 x 1080 Full HD INNOLUX N156HCA-EA1 300nits
LCD Control Board	Converter board for 2nd display
B/L Inverter/Converter	Panel built in
Touch Screen	Capacitive: 15.6” 10 points touch for Main/2nd display
Touch Controller	Capacitive: EETI 80H84 controller on board
External I/O	
Serial Port	2 x COM ports supported All Pin 9 supported 5V/12V 1A max output, selected by BIOS. RS232/422/485 selected in BIOS, RS422/485 by standard
USB Port	USB Port 2 x USB 3.0 on bottom side of Panel, 3 x USB 3.0 on Stand I/O
RJ-11	1 x RJ-11 for Cash Drawer

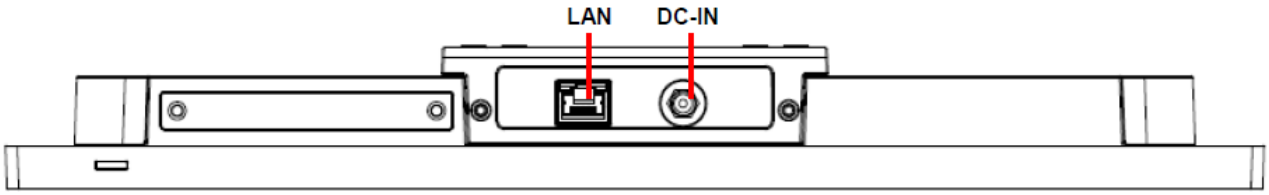
LAN Port	1x Giga LAN RJ45 connector
Wireless LAN Antenna	2T2R or 3T3R (hidden inside)
Switch	1 x Power switch
Indicator Light	1 x Power LED
Expansion Slots	1 x M.2 B Key slot for mSATA module 1 x M.2 E Key slot for .2.4/5G WiFi module
Mechanical	
Power Type	DC 24V power input
Power Connector Type	DC Plug with lock
Dimension	253 x 390 x 431mm (Dual screen with stand)
Weight	10Kg (Dual screen with stand)
Color	Black
Fanless	Fanless
OS Support	Windows 10 64bit, Android 8.1
Reliability	
EMI Test	CE/FCC Class B
Safety	All design for this project have to comply with UL / CB / CCC
Dust and Rain Test	IP 65 for front panel, IP 41 for back
Vibration Test	Random Vibration Operation 1 Test PSD : 0.00454G²/Hz , 1.5 Grms 2 System condition : operation mode 3 Test frequency : 5~500 Hz 4 Test axis : X,Y and Z axis 5 Test time : 30 minutes per each axis 6 IEC60068-2-64 Test Fh 6 Storage : mSATA Sine Vibration test (Non-operation) 1 Test Acceleration : 2G 2 Test frequency : 5~500 Hz 3 Sweep：1 Oct/ per one minute. (logarithmic) 4 Test Axis : X,Y and Z axis 5 Test time :30 min. each axis 6 System condition : Non-Operating mode 7. Reference IEC 60068-2-6 Testing procedures

	Package Vibration Test: 1 Test PSD : 0.026G²/Hz , 2.16 Grms 2 Test frequency : 5~500 Hz 3 Test axis : X,Y and Z axis 4 Test time : 30 minutes per each axis 5 IEC 60068-2-64 Test Fh
Mechanical Shock Test	1 Wave from : Half Sine wave 2 Acceleration Rate : 10g for operation mode 3 Duration Time : 11ms 4 No. of shock : Z axis 300 times 5 Test Axis : Z axis 6 operation mode 7 Reference IEC 60068-2-27 testing procedures Test Eb : Shock Test
Drop Test	Package drop test Reference ISTA 2A, Method : IEC-60068-2-32 Test:Ed Test Ea : Drop Test 1 Test phase : One corner, three edges, six faces 2 Test high : 96.5cm 3 Package weight : 5Kg 4 Test drawing
Operating Temperature	0°C ~ 40°C
Operating Humidity	24hrs operation dwell time at 40°C/80% Relative Humidity, Non-condensing
Storage Temperature	0°C ~ 60°C

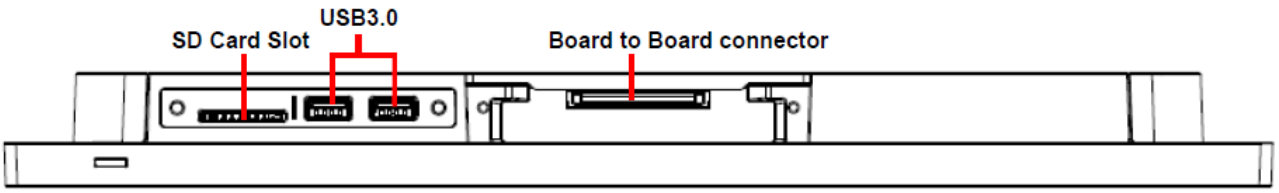
Note: Specifications are subject to change without notice.

1.4 System Overview

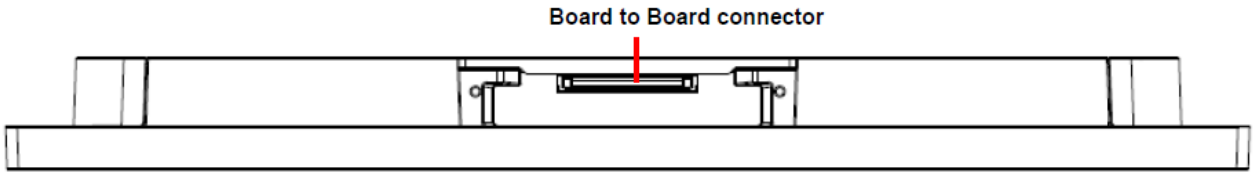
1.4.1 Bottom View



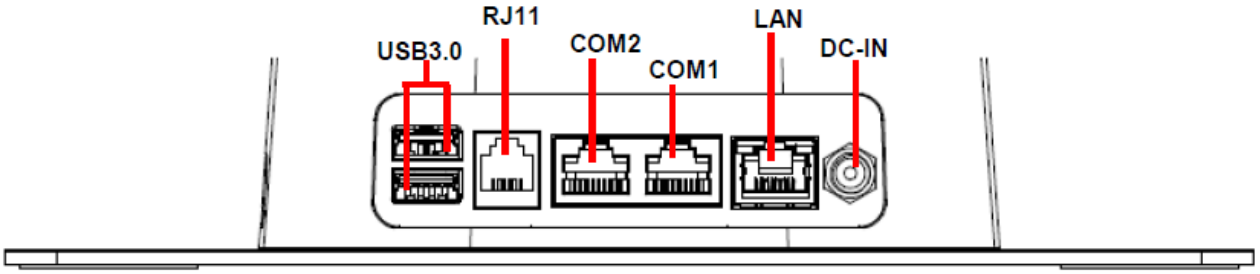
LCD1



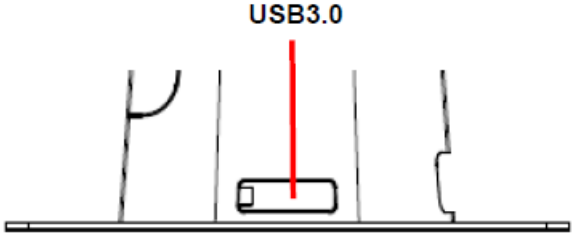
LCD2



Stand



Stand(side view)

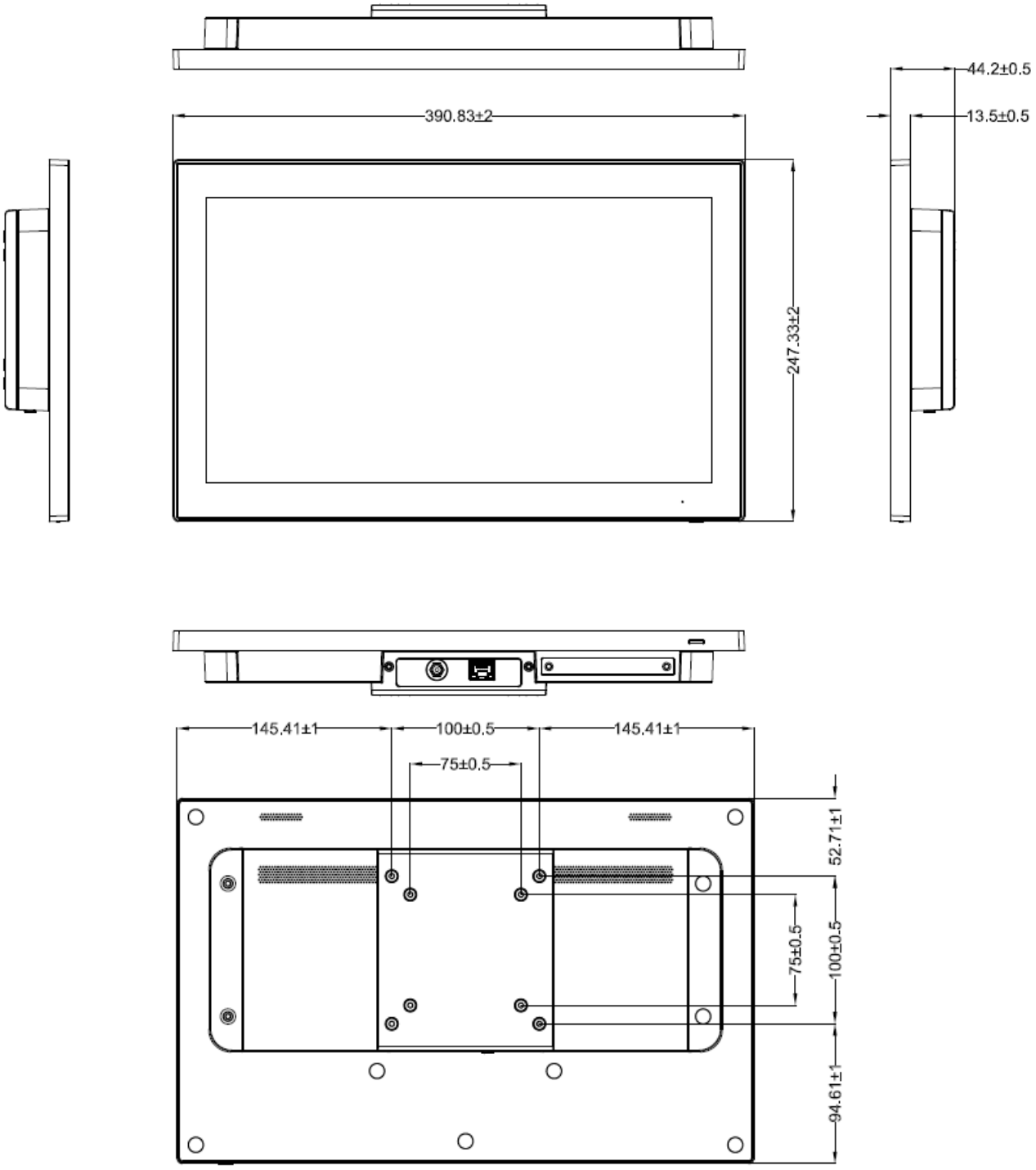


Connectors

Label	Function	Note
LAN	RJ-45 Ethernet connector	
DC-IN	DC Power-in connector	
SD Card Slot	SD Card Slot	
USB	2 x USB 3.0 connector(bottom side of Panel) 3 x USB 3.0 connector (Stand I/O)	
Board to Board connector	Board to Board connector	
RJ11	Cash Drawer connector	
COM1/2	Serial Port 1/2 connector	DB-9 male connector

1.5 System Dimensions

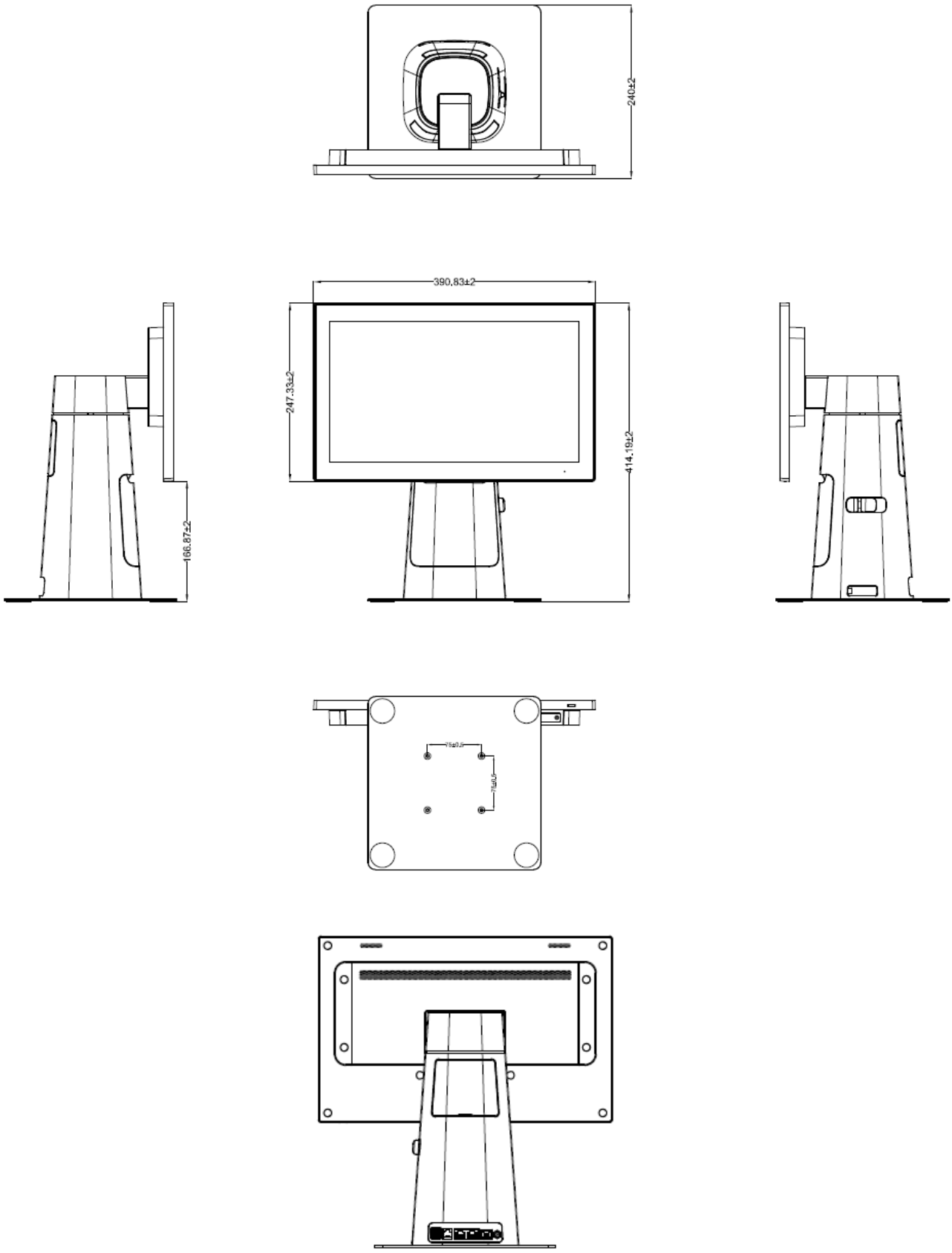
Standalone



(Unit: mm)

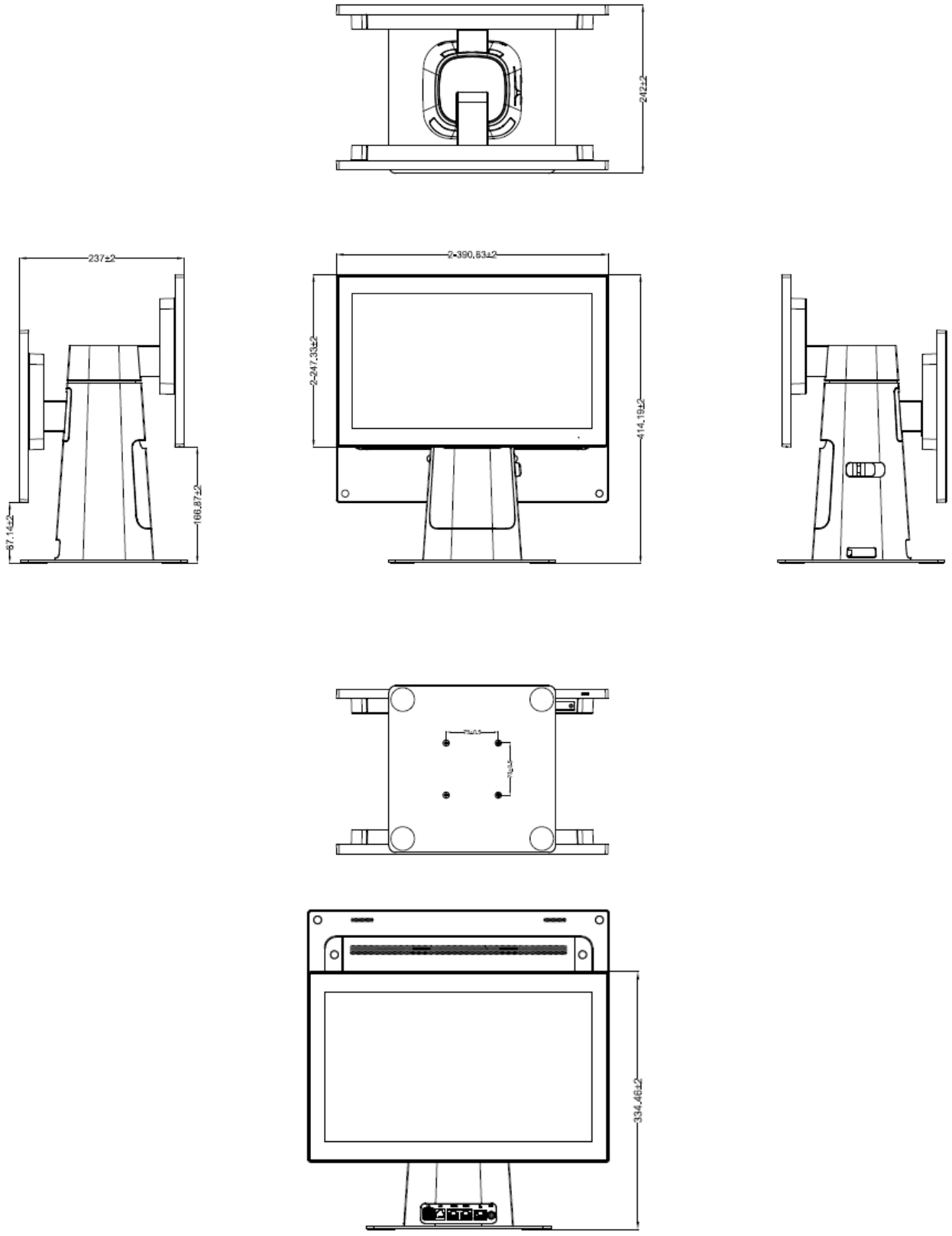
1.6 Panel + Stand Dimensions

Single display with stand



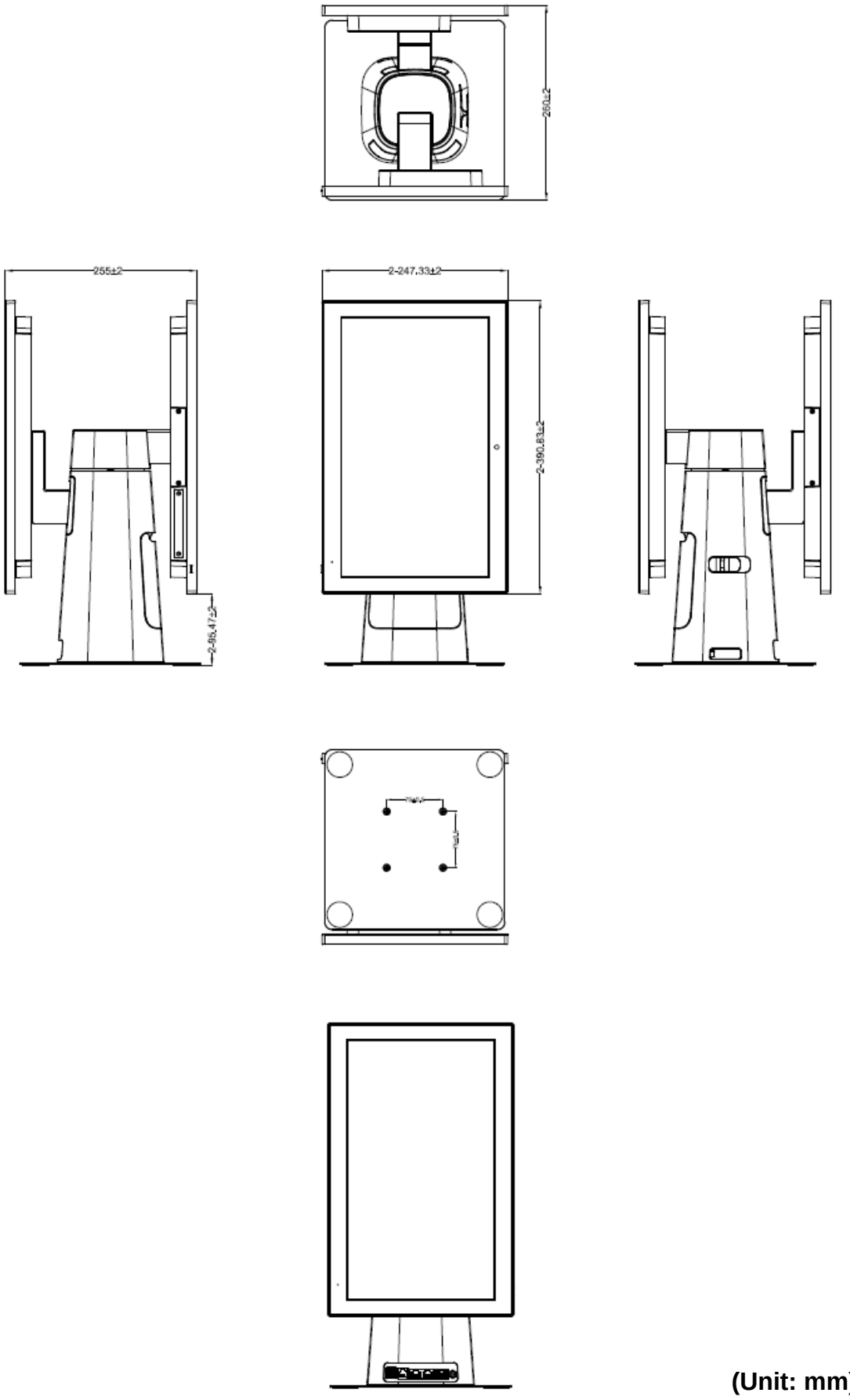
(Unit: mm)

Dual display with stand (Landscape)



(Unit: mm)

Dual display with stand (Portrait)



(Unit: mm)

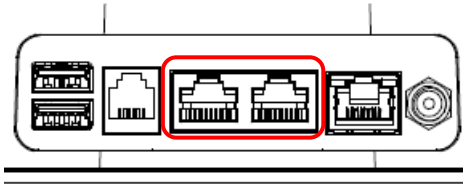
2. Hardware Configuration

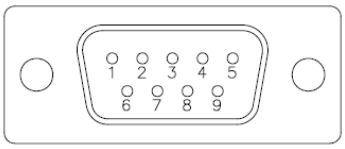
Note: If you need more information, please visit our website:

http://www.avalue.com.tw

2.1 RIVAR-1501 connector mapping

2.1.1 Serial Port 1/2 connector (COM1/2)





In RS-232 Mode

Signal	PIN	PIN	Signal
DCDA#	1	6	DSRA#
RXDA	2	7	RTSA#
TXDA	3	8	CTSA#
DTRA#	4	9	RIA#
GND	5		

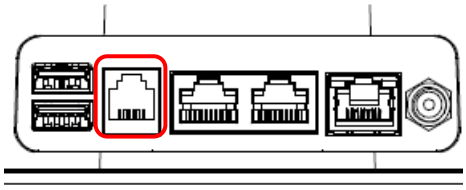
In RS-422 Mode

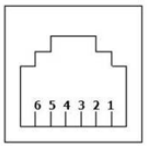
Signal	PIN	PIN	Signal
TxD1-	1	6	NC
TxD1+	2	7	NC
RxD1+	3	8	NC
RxD1-	4	9	NC
GND	5		

In RS-485 Mode

Signal	PIN	PIN	Signal
DATA1-	1	6	NC
DATA1+	2	7	NC
NC	3	8	NC
NC	4	9	NC
GND	5		

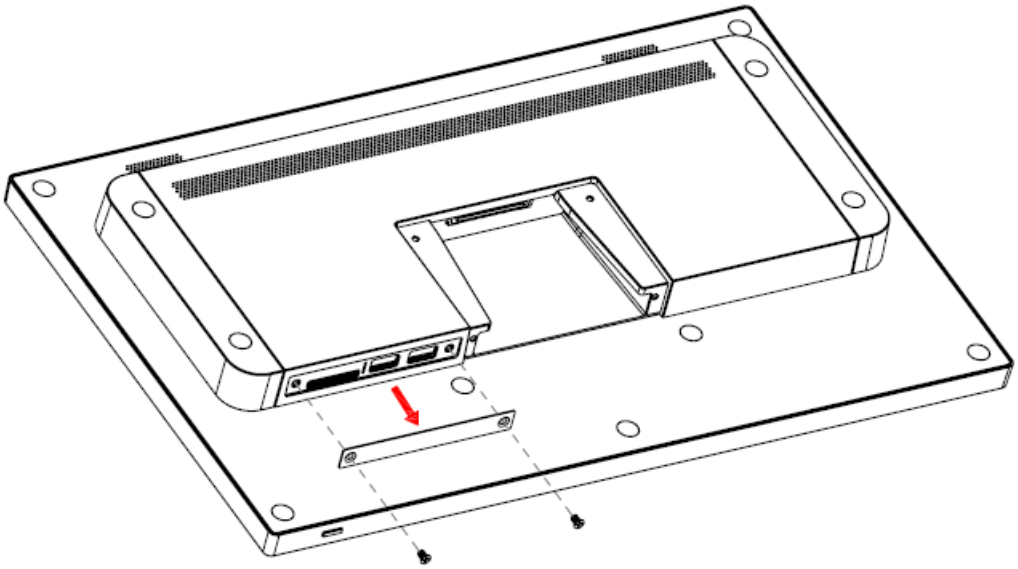
2.1.2 Cash Drawer connector (RJ11)



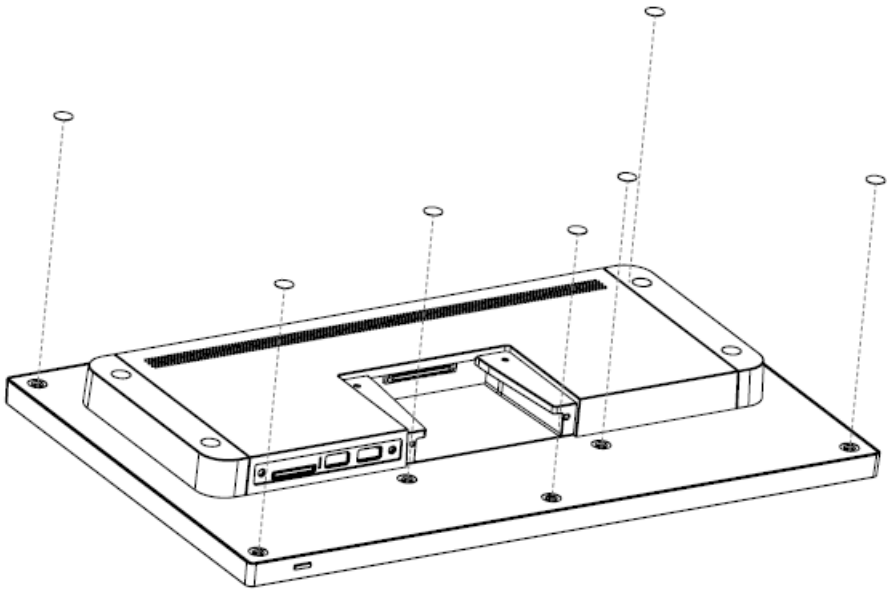


Signal	PIN
GND	1
KICKOUT1	2
CASH_SENSE	3
+24VA_CASH	4
KICKOOUT2	5
GND	6

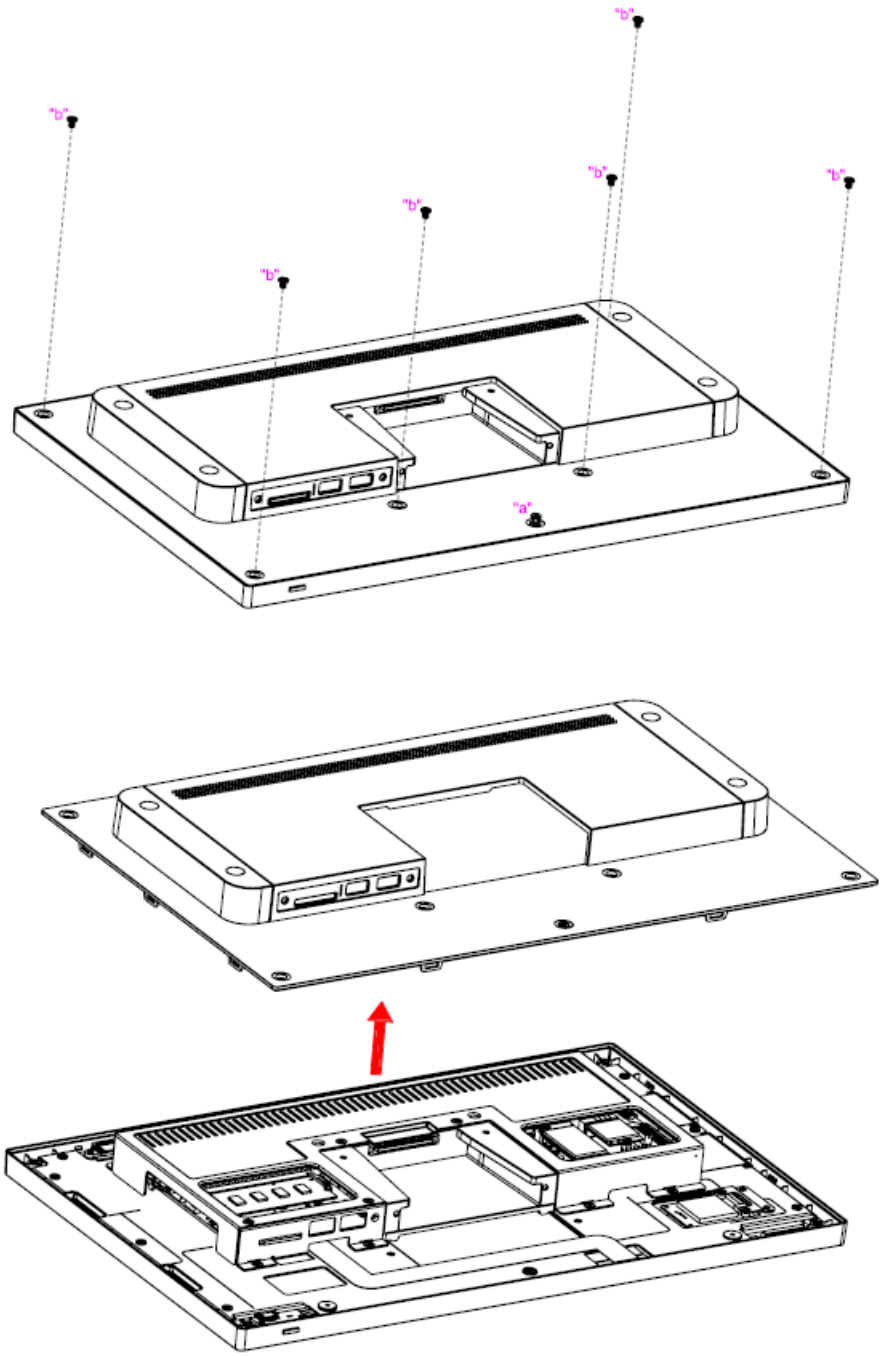
2.2 Installing RAM+M.2. Sata + wifi + NFC + Camera



Step 1. Remove 2 screws from IO Cover and take it off.

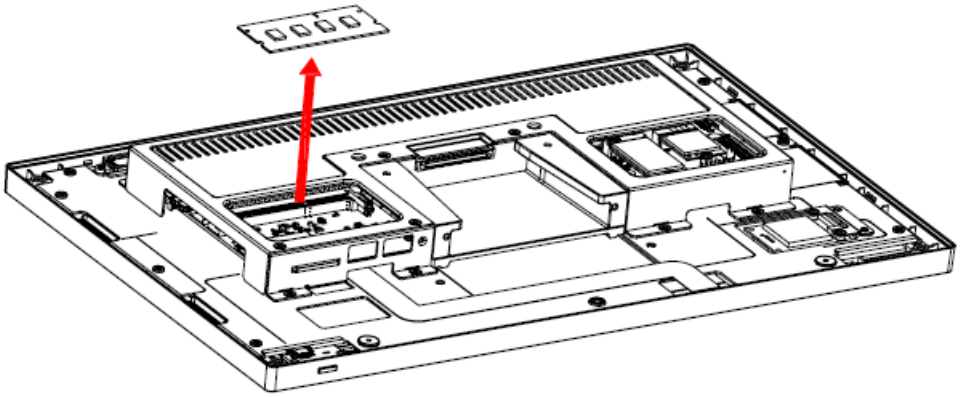


Step 2. Remove 7 Screw Mylar from the panel.

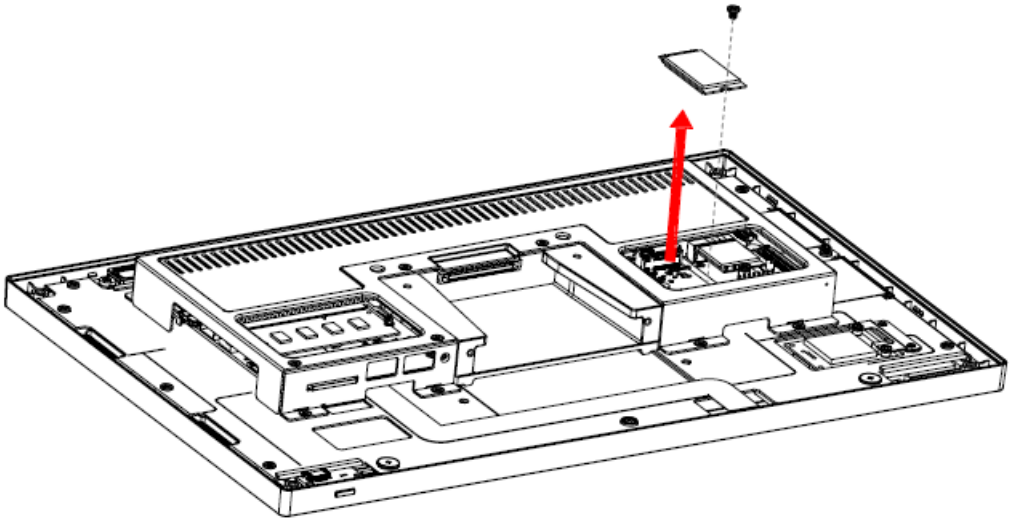


Step 3-1 Unfasten screw (“a”) from the panel.

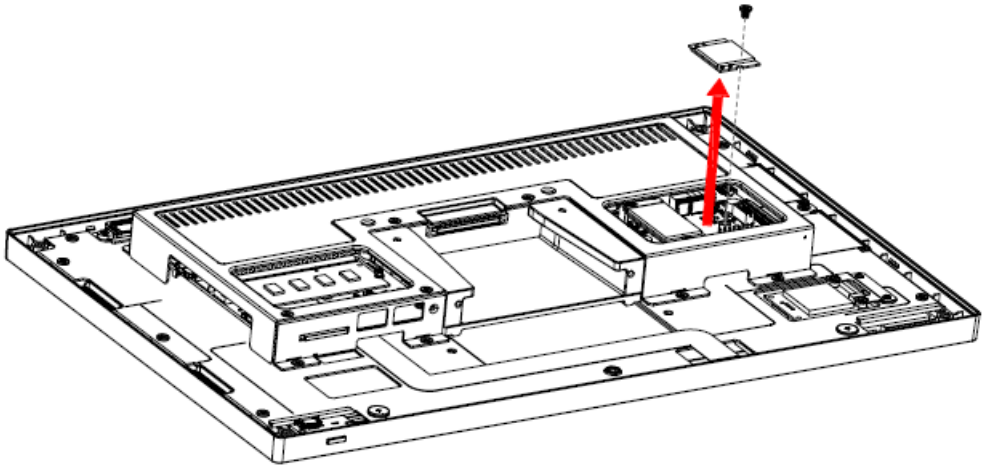
Step 3-2 Unfasten 6 screws (“b”) from the panel and take off the cover.



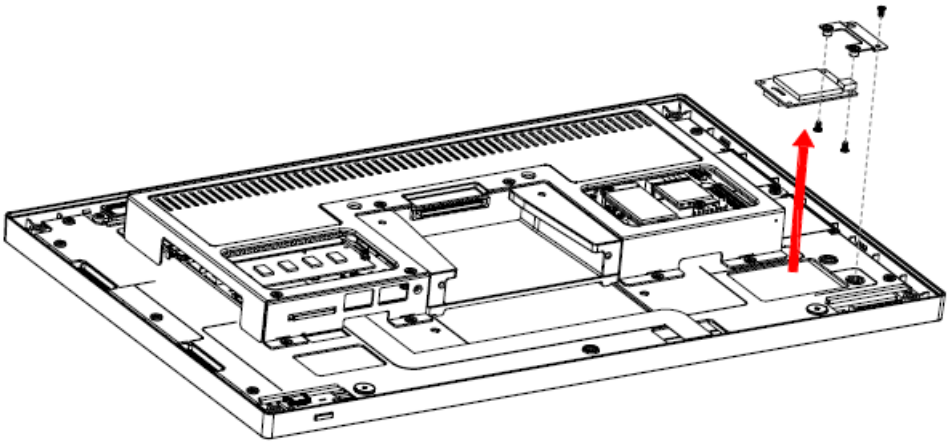
Step 4. Insert RAM into designated location.



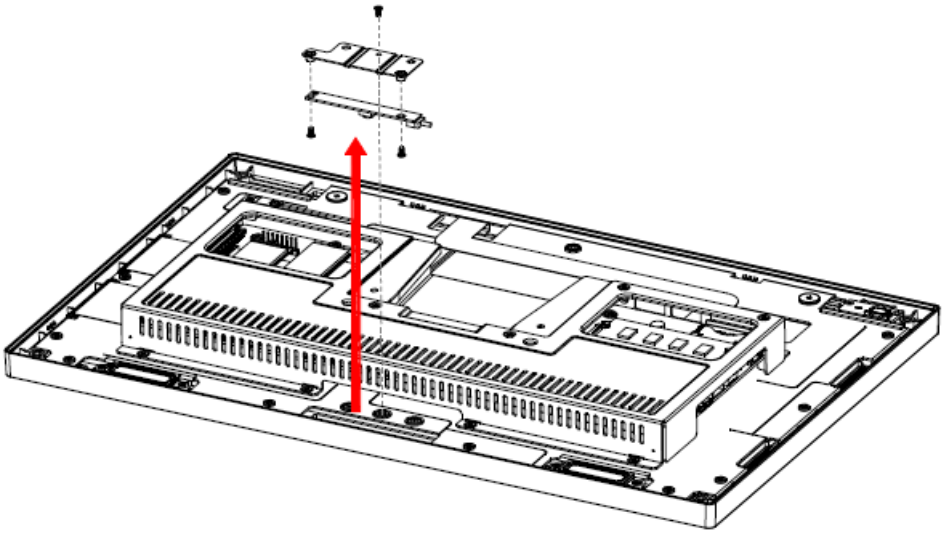
Step 5. Insert M.2 Sata into designated location.



Step 6. Insert wifi card into designated location.

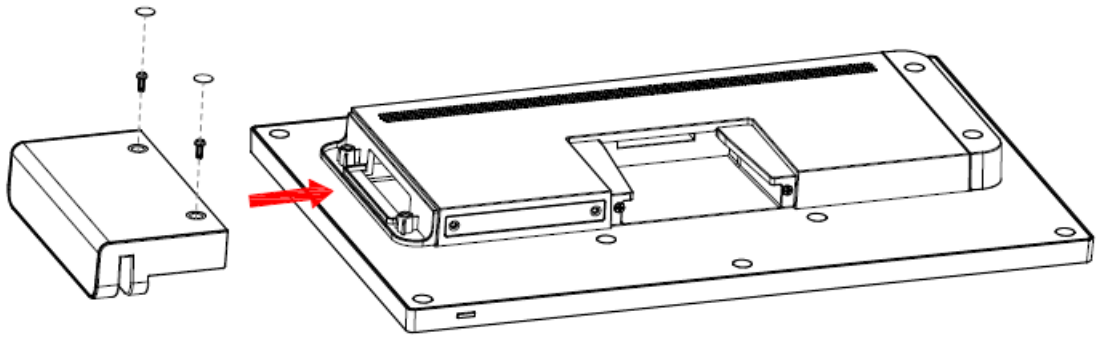


Step 7. Insert NFC card into designated location.



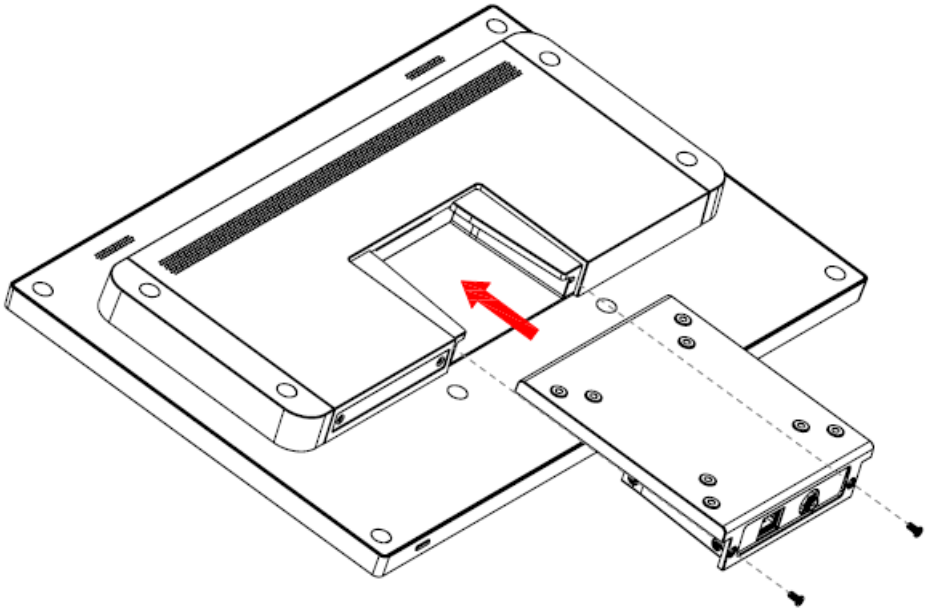
Step 8. Insert Camera card into designated location.

2.3 Installing MSR



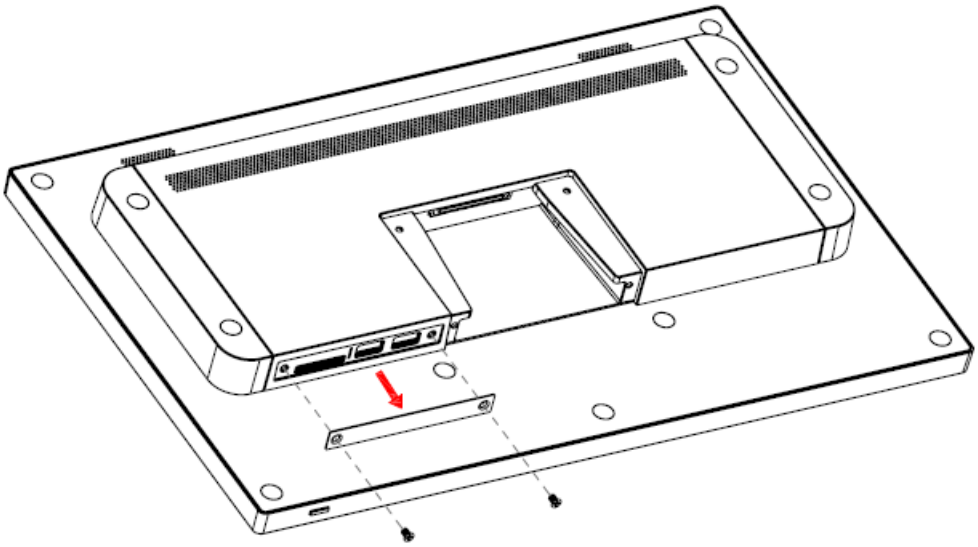
Step 1. Insert MSR into designated location and fasten with 2 screws to complete installation.

2.4 Installing VESA

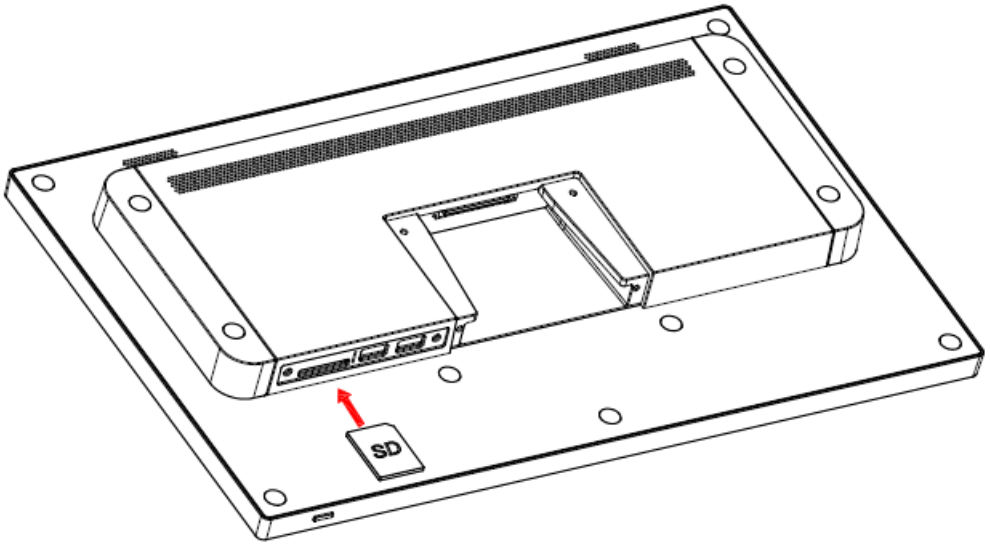


Step 1. Insert VESA into designated location and fasten with 2 screws to complete installation.

2.5 Installing SD Card

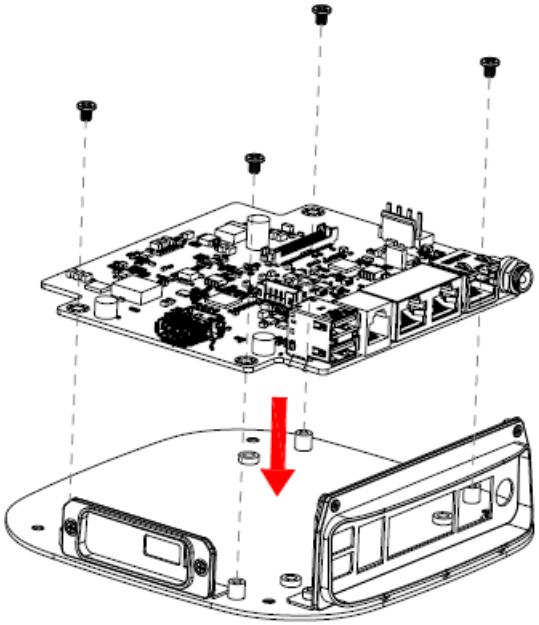


Step 1. Remove 2 screws from IO Cover and take it off.

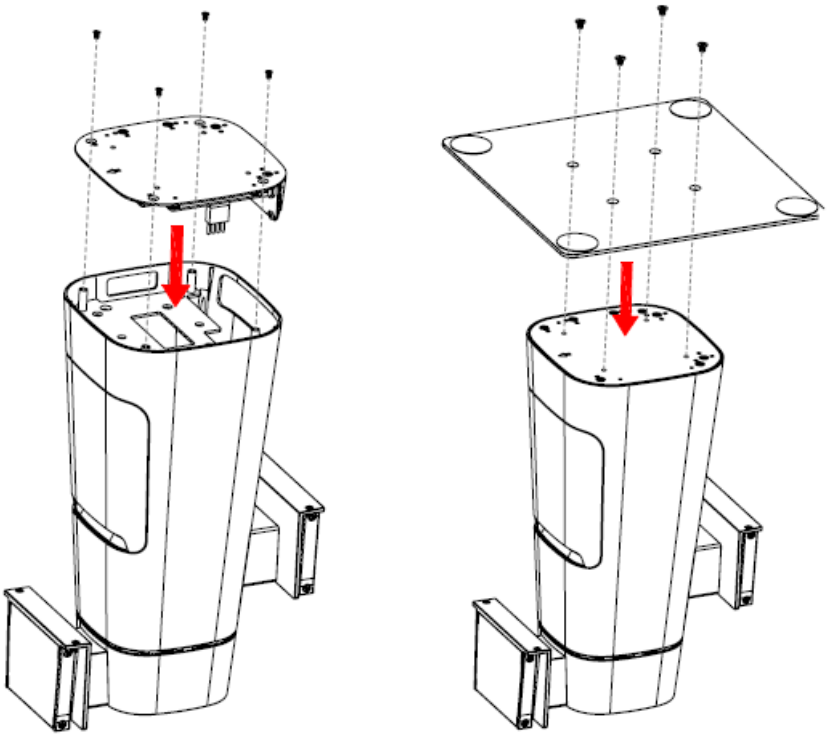


Step 2. Insert SD card into designated location.

2.6 Installing Stand IO Board(DB-D)

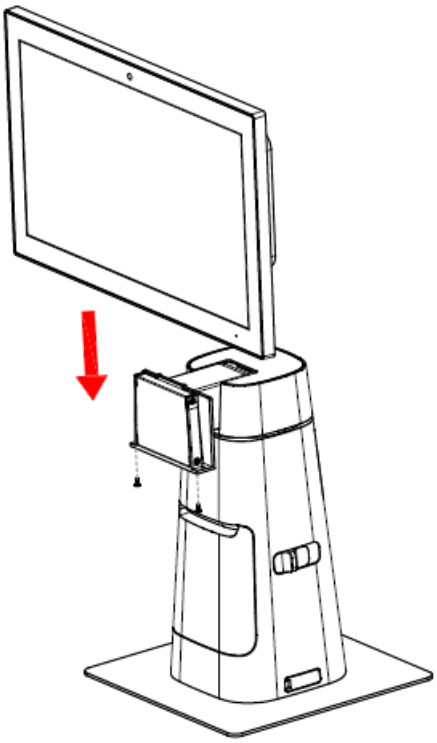


Step 1. Insert Stand IO Board into designated locations and fasten with 4 screws.

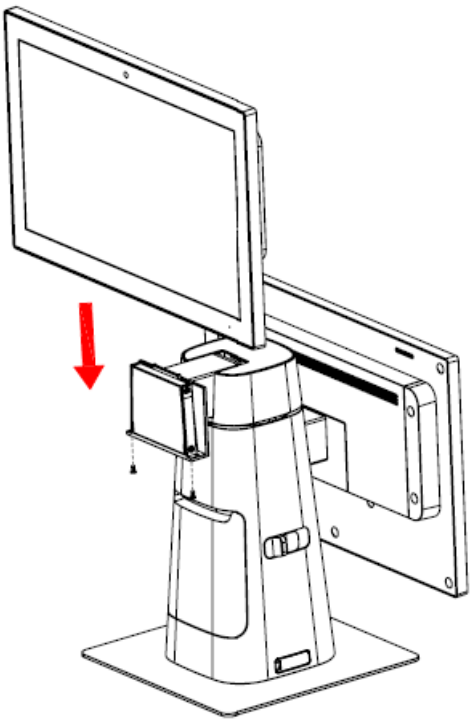


Step 2. Place back the cover and fasten 8 screws back to complete

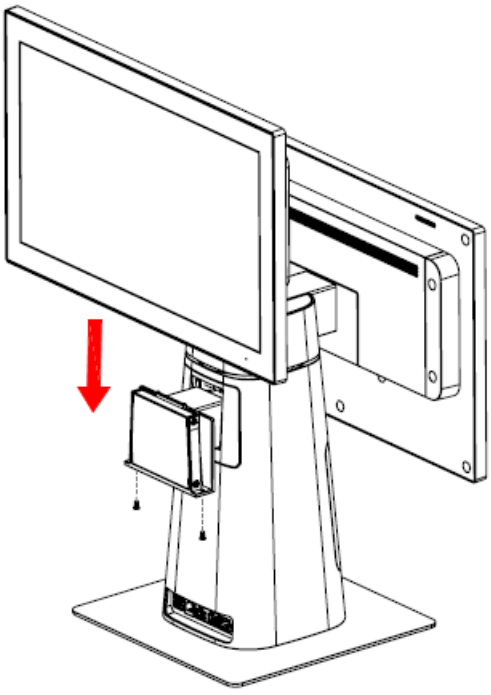
2.7 Installing Panel



Panel



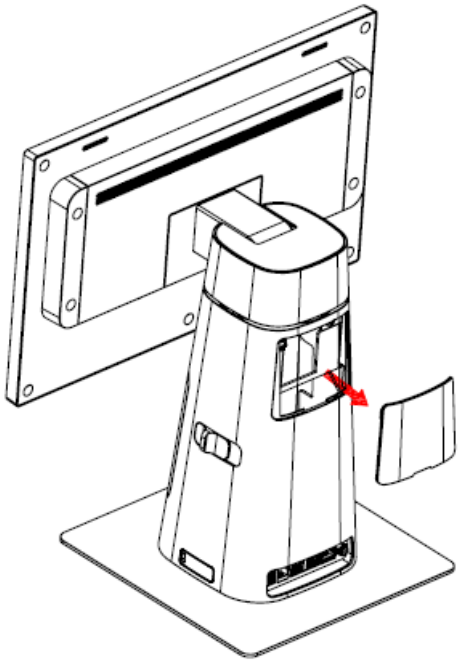
Panel+LCD1



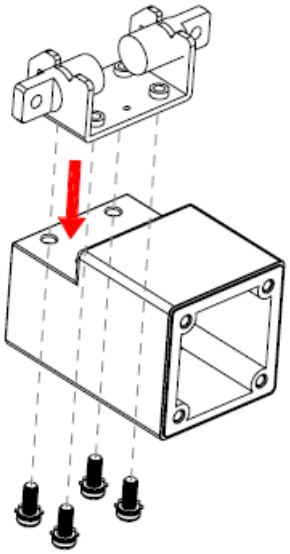
Panel+LCD2

Step 1. Fix the Panel on the mount bracket and fasten with 2 screws.

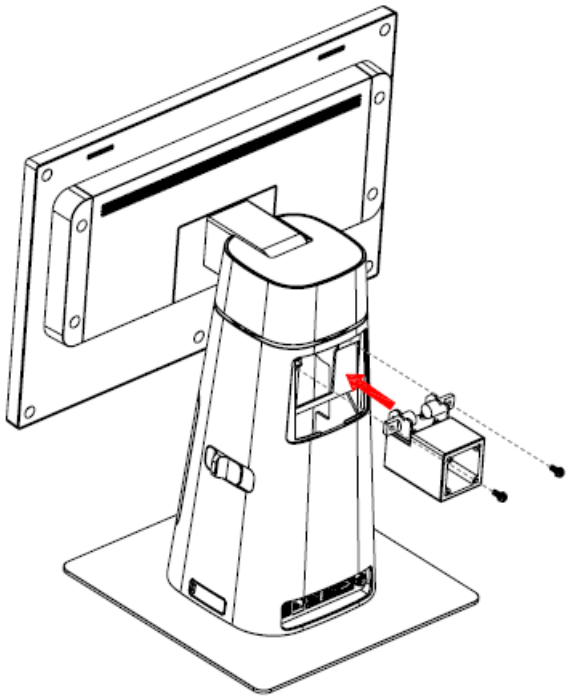
2.8 Installing LCD2 (Horizontal) Hinge



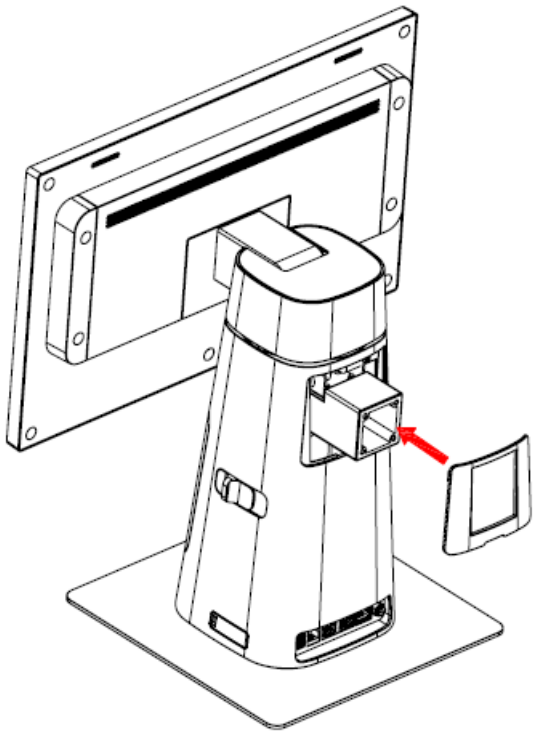
Step 1. Remove LCD2 Cover.



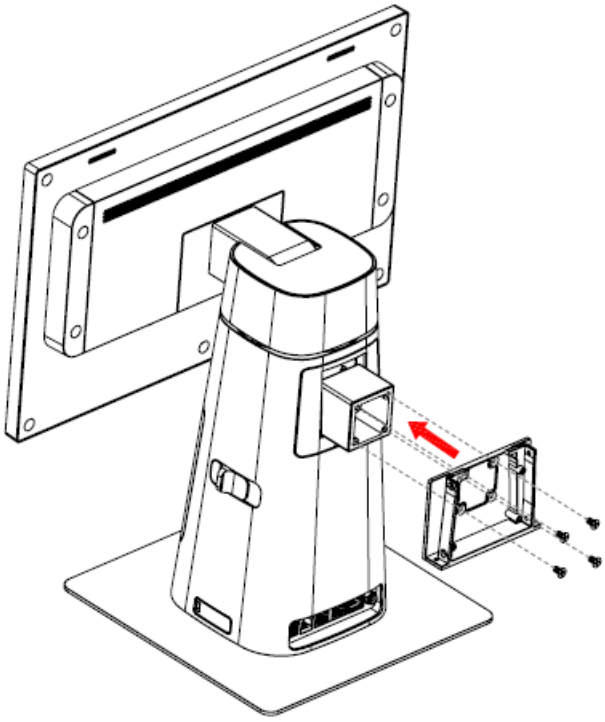
Step 2. Fix LCD2 Hinge using the 4 screws.



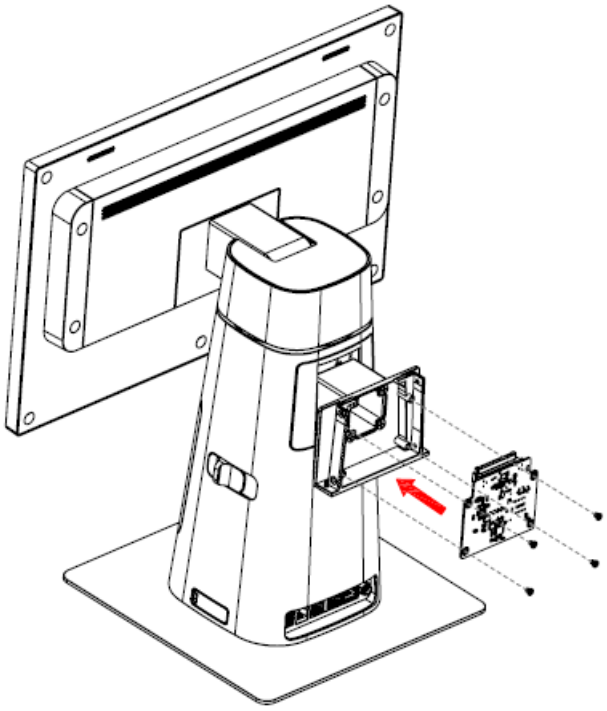
Step 3. Fix LCD2 Hinge using the 2 screws.



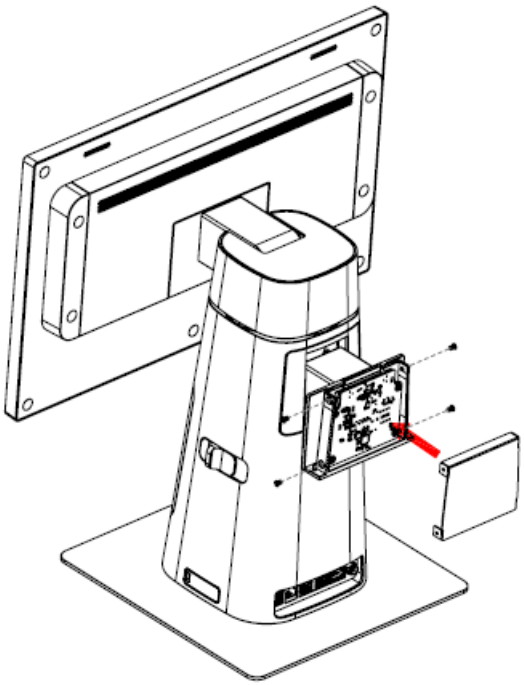
Step 4. Install the LCD2 Cover.



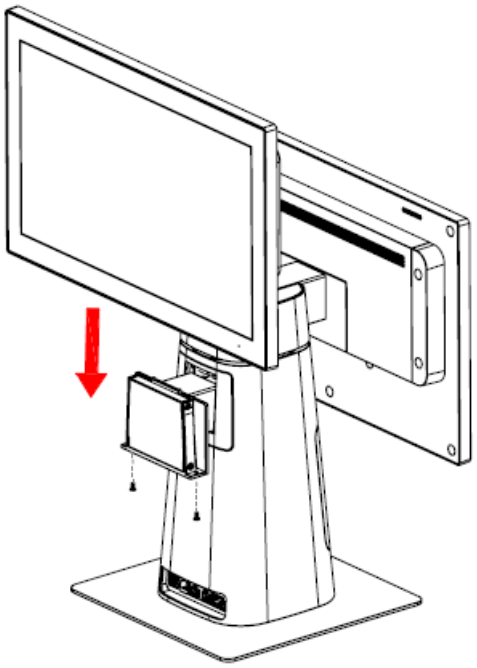
Step 5. Fix LCD2 slide using the 4 screws.



Step 6. Fix B2B Stand IO board (DB-A) using the 4 screws.

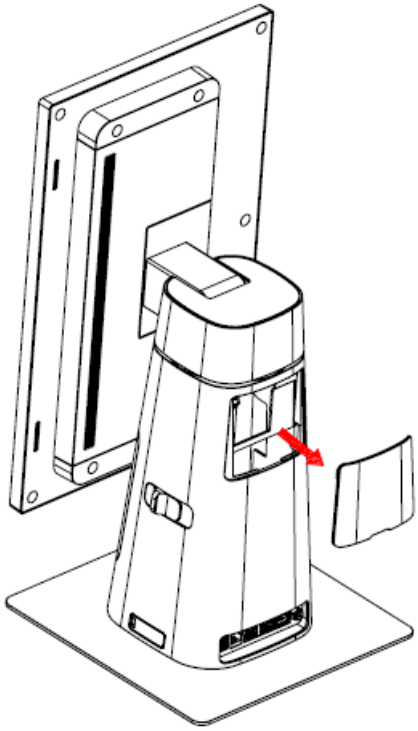


Step 7. Fix LCD2 Hinge Bracket using the 4 screws.

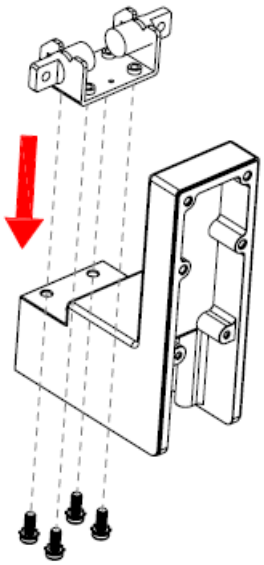


Step 8. Install LCD2 and fasten screws to complete.

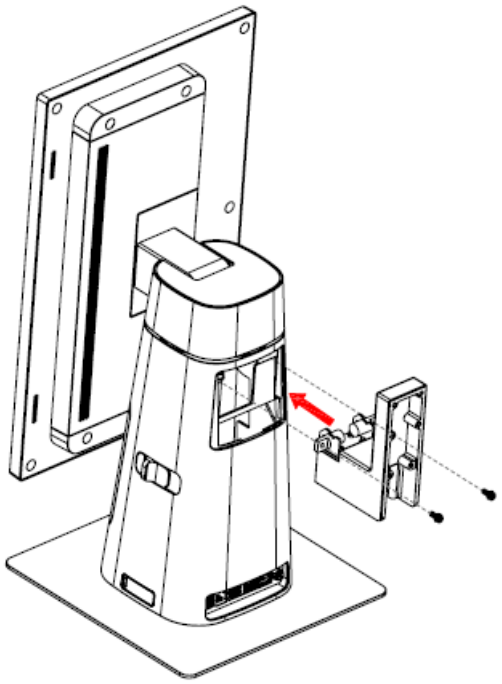
2.9 Installing LCD2 (Vertical) Hinge



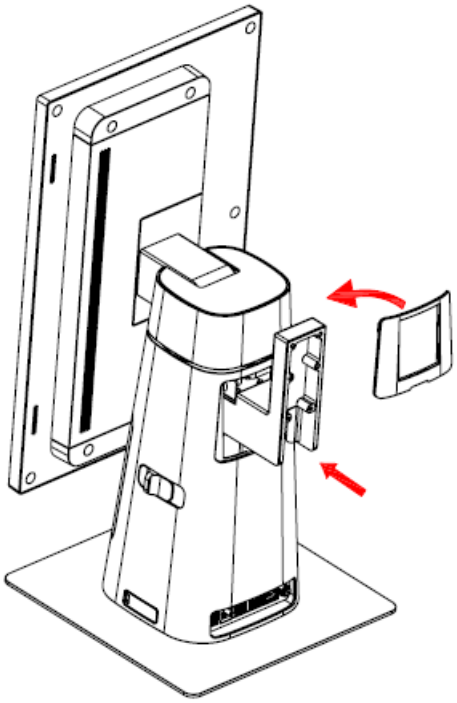
Step 1. Remove LCD2 Cover.



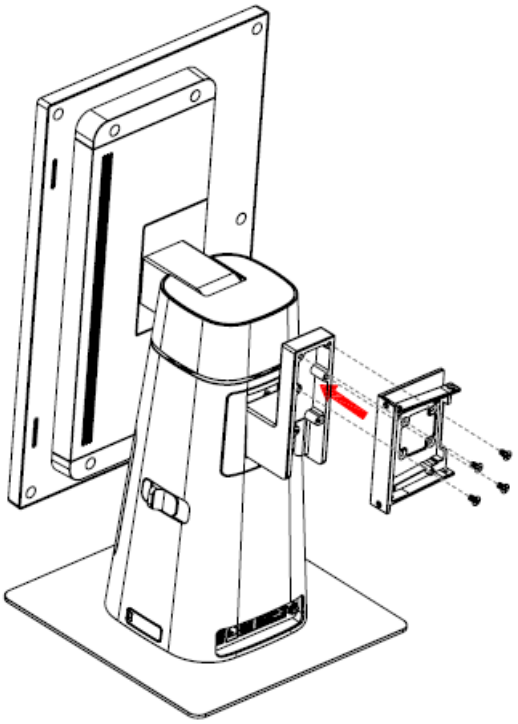
Step 2. Fix LCD2 Hinge using the 4 screws.



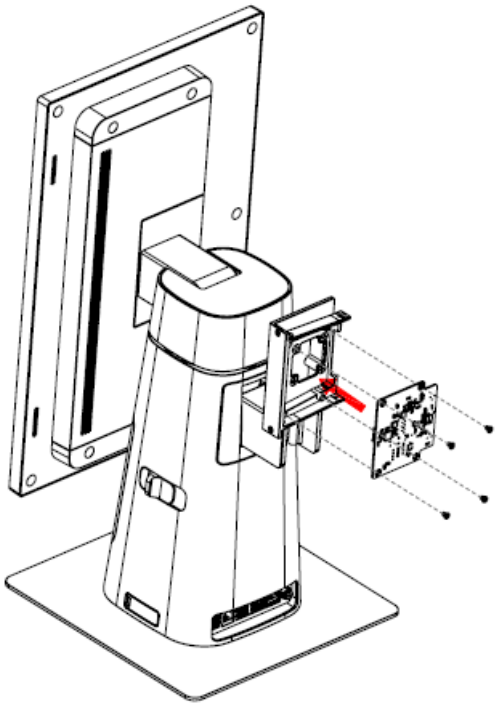
Step 3. Fix LCD2 Hinge using the 2 screws.



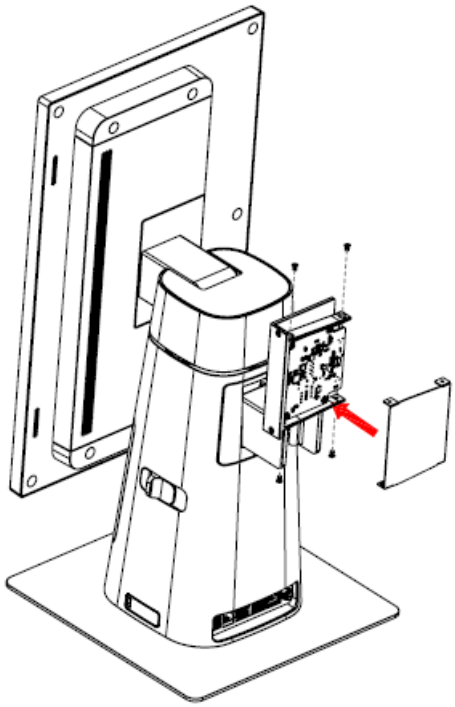
Step 4. Install the LCD2 Cover.



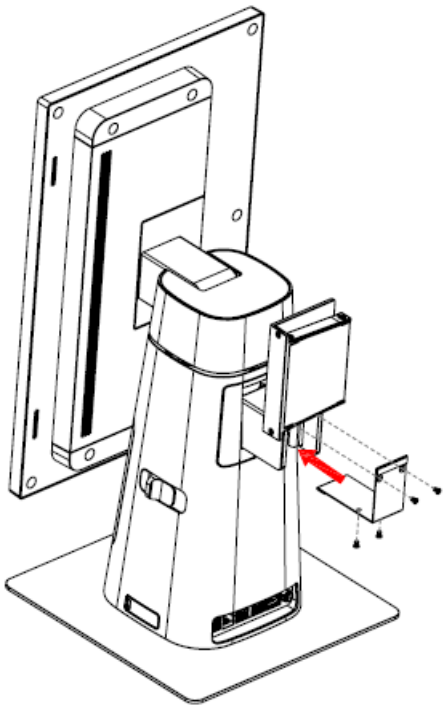
Step 5. Fix LCD2 slide using the 4 screws.



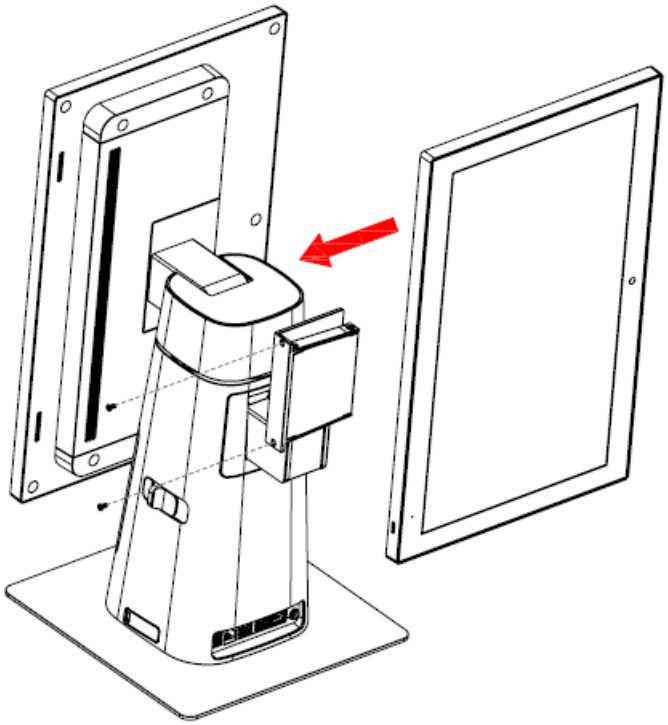
Step 6. Fix B2B Stand IO board (DB-A) using the 4 screws.



Step 7. Fix LCD2 Hinge Bracket using the 4 screws.



Step 8. Fix LCD2 Cover using the 4 screws.



Step 9. Install LCD2 and fasten screws to complete.