

# LPC-1009/1209/1509/ 1709 Series

Fanless Multifunctional Touch Panel Computer

## Quick Reference Guide

5<sup>th</sup> Ed – 17 October 2022

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Part No. E2017L090A5R

## 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 UNDESIRE 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 INSTALLED 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.

## Notice

This guide is designed for experienced users to setup the system within the shortest time. For detailed information, please always refer to the electronic user's manual.

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To receive the latest version of the user's manual; please visit our Web site at:

<http://www.avalue.com.tw/>

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# 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.  
Risk of Explosion if Battery is replaced by an Incorrect Type.  
Dispose of Used Batteries According to the Instructions.

### Français:

### Attention!



Débranchez le câble d'alimentation de votre châssis chaque fois que vous travaillez avec le matériel. Ne faites pas de connexion lorsque le système est allumé. Les composants électroniques sensibles peuvent être endommagés par les surtensions soudaines. Seule les personnels expérimentés de l'électronique peuvent ouvrir le châssis du PC.

### Précaution!



Il faut toujours mettre à la masse pour éliminer l'électricité statique avant de toucher la carte CPU. Les appareils électroniques modernes sont très sensibles aux électricité statique. Pour des raisons de sécurité, utilisez un bracelet électrostatique. Placez tous les composants électroniques sur une surface antistatique ou dans un sac antistatique quand ils ne sont pas dans le châssis.  
Risque d'explosion si la batterie est remplacée par un type incorrect. Jetez les piles usagées selon les instructions

## 1.2 Packing List

- 1 x LPC-1009/1209/1509/1709 Panel PC
- 1 x Power Adapter
- 1 x Stand for Panel PC (optional)

### 1.3 Document Amendment History

Revision	Date	By	Comment
1 <sup>st</sup>	November 2014	Avalue	Initial Release
2 <sup>nd</sup>	June 2015	Avalue	Update Specifications
3 <sup>rd</sup>	September 2015	Avalue	Update Specifications
4 <sup>th</sup>	May 2017	Avalue	Update 2.2 Installing Hard Disk & Memory
5 <sup>th</sup>	October 2022	Avalue	Add Battery Warning

## 1.3 System Specifications

Panel		
Model	<b>LPC-1009</b>	<b>LPC-1209</b>
LCD size	10.4", 4:3	12.1", 4:3
Display type	XGA TFT	XGA
Resolution	1024 x 768	
Pixel pitch	0.0685mm(H) x 0.2055mm(V)	0.240mm(H) x 0.240mm(V)
Luminance	500 cd/m <sup>2</sup>	600 cd/m <sup>2</sup>
Contrast ratio	1200	700
Viewing angle	88(U), 88(D), 88(L), 88(R)	70(U), 70(D), 80(L), 80(R)
Response time	25 ms	16 ms
Backlight	LED	
Touch type	5 Wires resistive	
Touch Light transmission	80	
Touch interface	USB (EETI)	
System		
Board	EBM-BYT	
CPU	Onboard Intel® Atom Quad-Core E3845 1.91GHz with Integrated Chipset	
I/O Chipset	E/C IT8528E	
System Memory	One 204-pin DDR3L SODIMM Socket Supports Up to 8GB DDR3L 1333 SDRAM	
SSD	One CompactFlash Type I/ II Socket	
Hard Driver Bay	One 2.5" SATA HDD	
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec./1sec.step	
H/W Status Monitor	Monitoring system temperature, voltage, and cooling fan status. Auto throttling control when CPU overheats	
Expansion	1 x mPCIe with SIM Slot, 1 x mPCIe Supports mSATA	
Rear I/O		
Serial Port	1 x RS-232	
Ethernet	2 x RJ-45	
HDMI	1 x HDMI	
Audio Port	1 x Line-out	
USB	1 x USB 3.0, 1 x USB 2.0 (Optional Extra 2 x USB 2.0)	
Display		
Chipset	Intel Bay Trail SoC Integrated Graphics	
Resolution	HDMI 1.4a resolutions up to 1920 x 1200@ 60 24bpp	
Dual Display	LVDS + HDMI	

## LPC-1009/1209/1509/1709 Series

Audio 		
AC97 Codec	Realtek ALC888S supports 5.1-CH Audio	
Audio Interface	Connector: Line out	
Ethernet 		
LAN Chip	Dual Intel I210IT PCI-E Gigabit LAN	
Ethernet Interface	10/100/1000 Base-Tx Fast Ethernet compatible	
Mechanical & Environment 		
Color	Front Silver & Rear panel Black	
Mounting	Wall/Stand/VESA 75 mm x 75 mm	
System Power Requirement	+12 V ~ +26 V	
Power Adapter	Input: 100~240 Vac/ 50~60 Hz Output: +12 Vdc / 5 A (60W)	
Power Type	AT/ATX	
Operating Temp.	-20°C ~ 60°C (-4°F ~ 140°F)	
Storage Temp.	-30 to 70°C	
Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing	
Dimensions	259 x 196 x 41 mm	283 x 222 x 45 mm
Weight	2.11 Kgs	2.84 Kgs

## Quick Reference Guide

Panel 		
Model	LPC-1509	LPC-1709
LCD size	15", 4:3	17", 4:3
Display type	XGA	SXGA
Resolution	1024 x 768	1280 x 1024
Pixel pitch	0.297mm(H) x 0.297mm(V)	0.264mm(H) x 0.264mm(V)
Luminance	400 cd/m <sup>2</sup>	350 cd/m <sup>2</sup>
Contrast ratio	700	800
Viewing angle	70(U), 70(D), 80(L), 80(R )	80(U), 80(D), 85(L), 85(R )
Response time	16 ms	30 ms
Backlight	LED	
Touch type	5 Wires resistive	
Touch Light transmission	80	
Touch interface	USB (EETI)	
System 		
Board	EBM-BYT	
CPU	Onboard Intel® Atom Quad-Core E3845 1.91GHz with Integrated Chipset	
I/O Chipset	E/C IT8528E	
System Memory	One 204-pin DDR3L SODIMM Socket Supports Up to 8GB DDR3L 1333 SDRAM	
SSD	One CompactFlash Type I/ II Socket	
Hard Driver Bay	One 2.5" SATA HDD	
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec./1sec.step	
H/W Status Monitor	Monitoring system temperature, voltage, and cooling fan status. Auto throttling control when CPU overheats	
Expansion	1 x mPCIe with SIM Slot, 1 x mPCIe Supports mSATA	
Rear I/O 		
Serial Port	1 x RS-232	
Ethernet	2 x RJ-45	
HDMI	1 x HDMI	
Audio Port	1 x Line-out	
USB	1 x USB 3.0, 1 x USB 2.0 (Optional Extra 2 x USB 2.0)	
Speaker	2 x 1W	
Display 		
Chipset	Intel Bay Trail SoC Integrated Graphics	

## LPC-1009/1209/1509/1709 Series

<b>Resolution</b>	HDMI 1.4a resolutions up to 1920x1200@ 60 24bpp	
<b>Dual Display</b>	LVDS + HDMI	
<b>Audio</b> ▾		
<b>AC97 Codec</b>	Realtek ALC888S supports 5.1-CH Audio	
<b>Audio Interface</b>	Connector: Line out	
<b>Ethernet</b> ▾		
<b>LAN Chip</b>	Dual Intel I210IT PCI-E Gigabit LAN	
<b>Ethernet Interface</b>	10/100/1000 Base-Tx Fast Ethernet compatible	
<b>Mechanical &amp; Environment</b> ▾		
<b>Color</b>	Front Silver & Rear panel Black	
<b>Mounting</b>	Wall/Stand/VESA 100 mm x 100 mm/ 75 mm x 75 mm	
<b>System Power Requirement</b>	+12 V ~ +26 V	
<b>Power Adapter</b>	Input: 100~240 Vac/ 50~60 Hz Output: +12 Vdc / 5 A (60W)	
<b>Power Type</b>	AT/ATX	
<b>Operating Temp.</b>	-20°C ~ 60°C (-4°F ~ 140°F)	
<b>Storage Temp.</b>	-30 to 70°C	
<b>Operating Humidity</b>	0% ~ 90% Relative Humidity, Non-condensing	
<b>Dimensions</b>	350 x 273.9 x 53.1 mm	382 x 320 x 58.8 mm
<b>Weight</b>	4.2 Kgs	5.2 Kgs

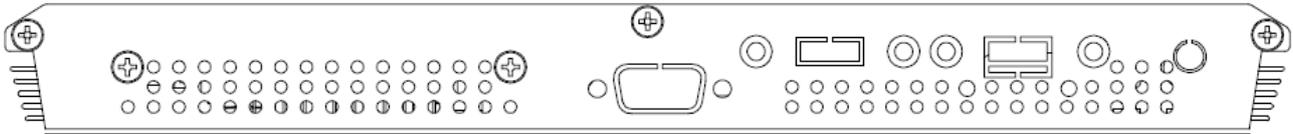


**Note:** Specifications are subject to change without notice.

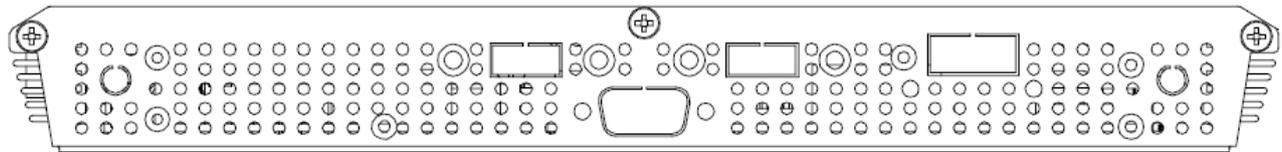
## 1.4 System Overview

### 1.4.1 Top View

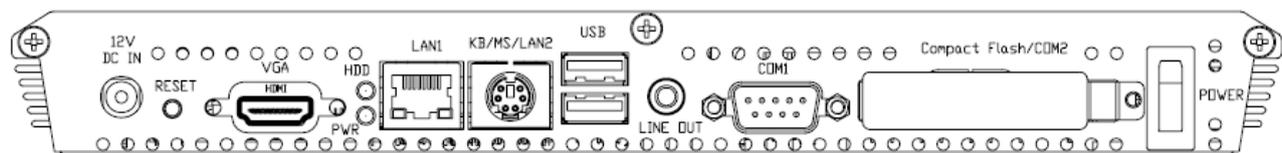
#### LPC-1009/1209



#### LPC-1509/1709



### 1.4.2 Bottom View

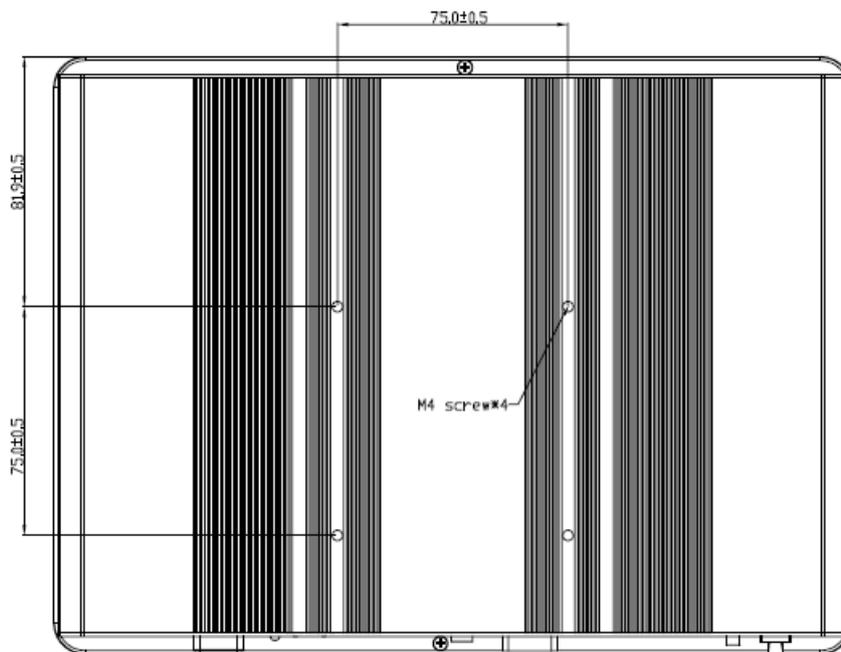
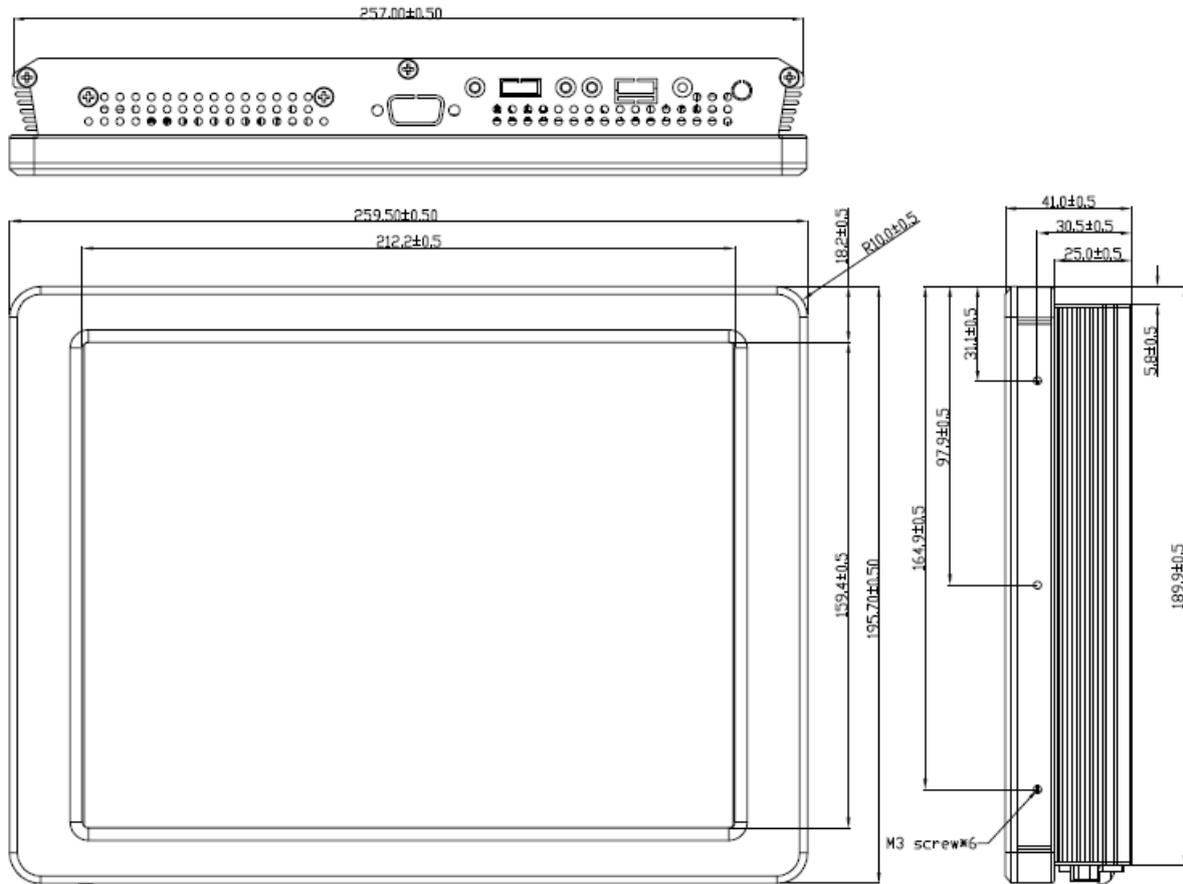


## Connectors

Label	Function	Note
<b>POWER</b>	Power on button	
<b>Compact Flash/COM2</b>	CF Type I/II Socket with Ejector	Optional for 2 <sup>nd</sup> COM port
<b>COM1</b>	Serial port 1 connector	DB-9 male connector
<b>LINE OUT</b>	Line-out audio jack	
<b>USB</b>	1 x USB 2.0 connector 1 x USB 3.0 connector	Dock USB
<b>LAN1</b>	RJ-45 Ethernet connector 1	
<b>KB/MS/LAN2</b>	2nd LAN Optional PS/2 connector	
<b>HDD</b>	HDD indicator	
<b>PWR</b>	System power indicator	
<b>VGA/HDMI</b>	HDMI connector	
<b>RESET</b>	Reset button	
<b>DC-IN</b>	DC Power-in connector	

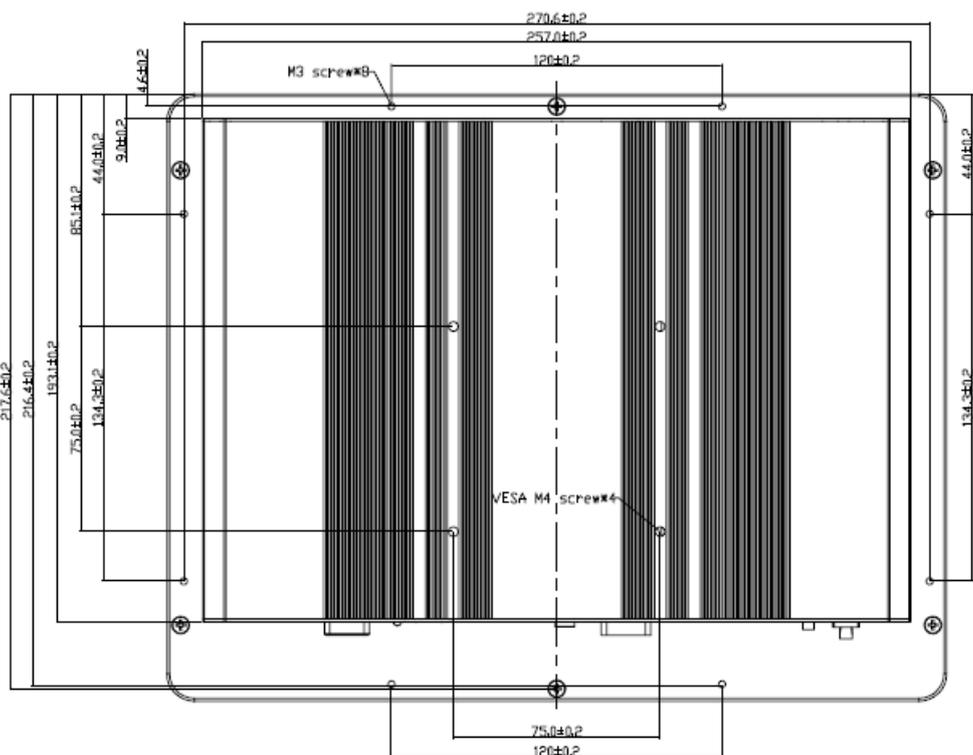
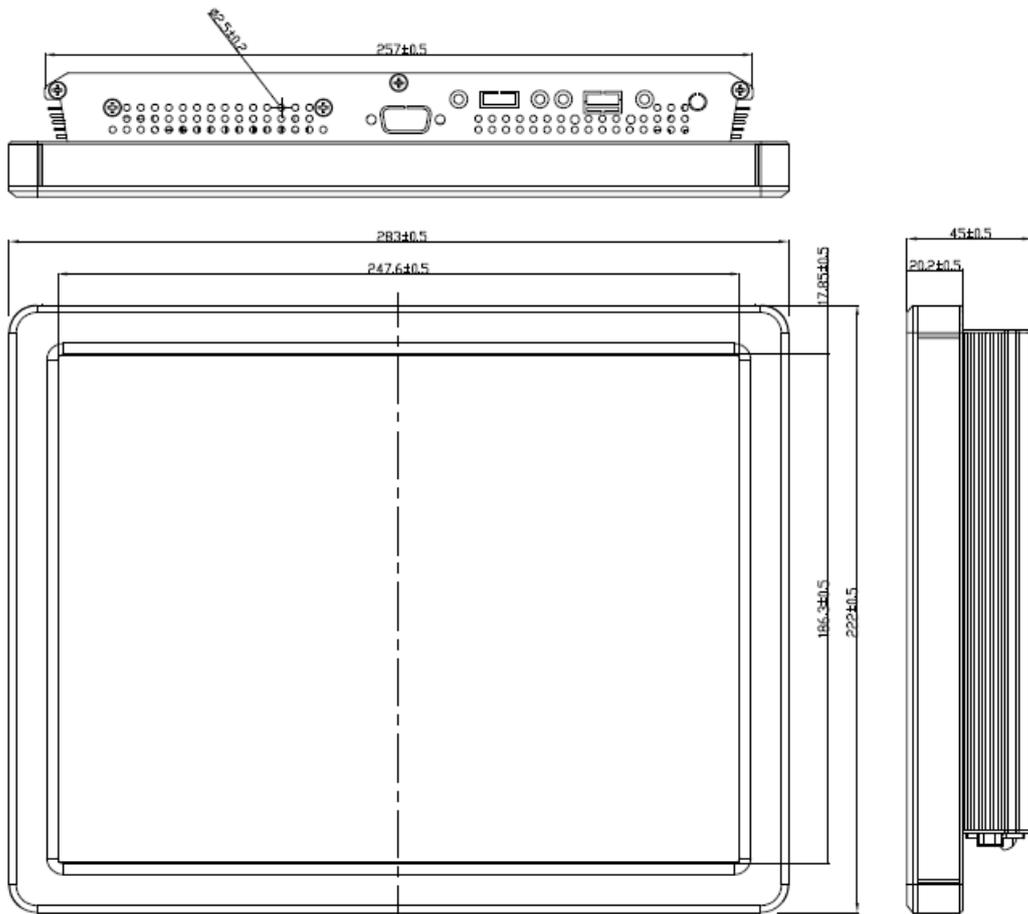
## 1.5 System Dimensions

### 1.5.1 LPC-1009 Front and Rear side



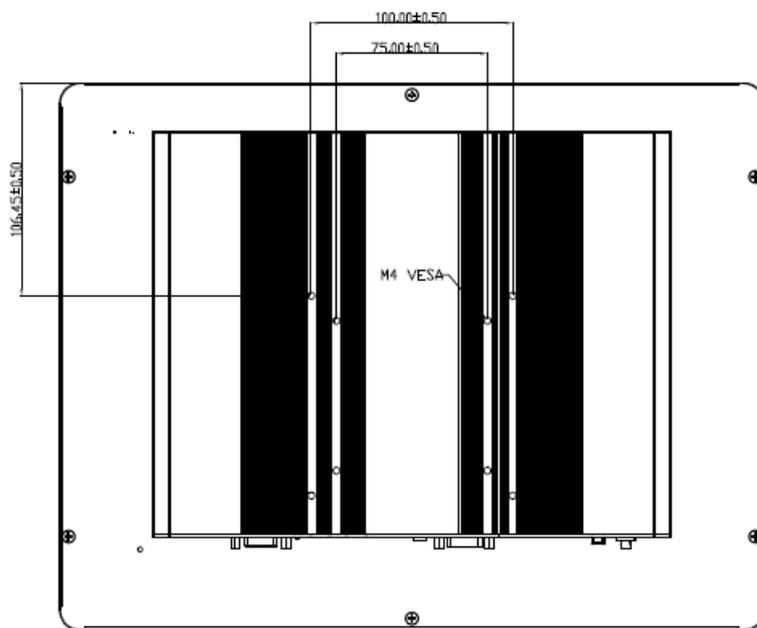
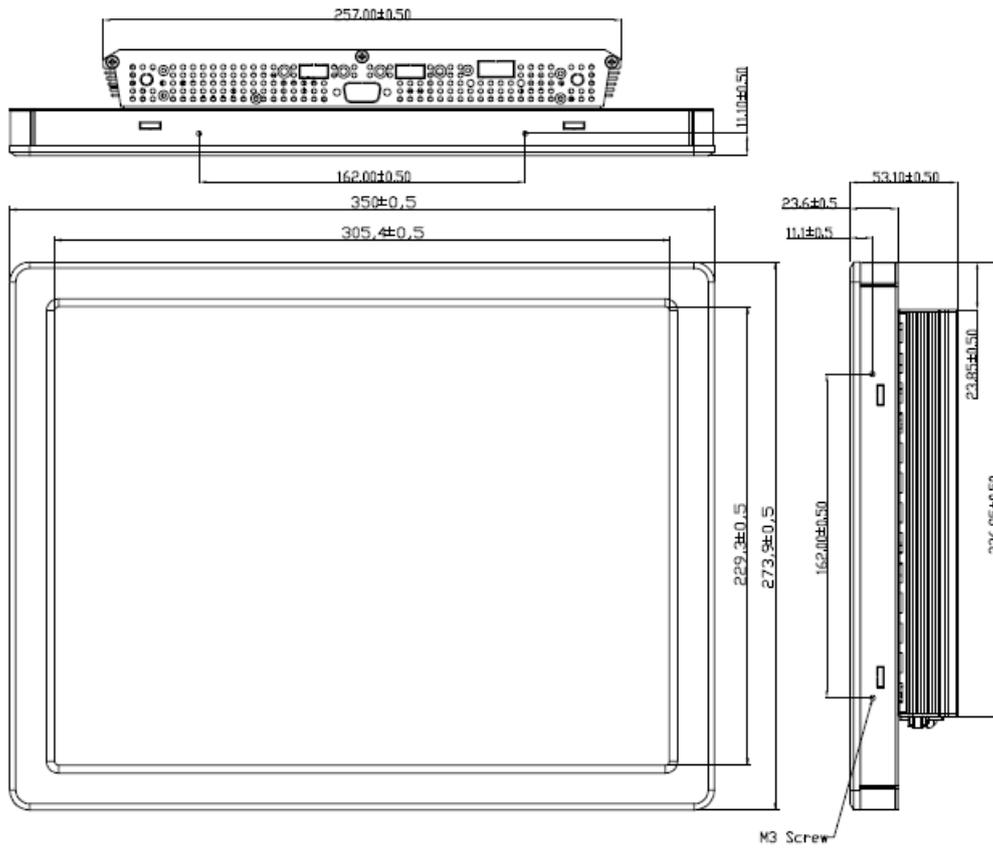
(Unit: mm)

1.5.2 LPC-1209 Front and Rear side



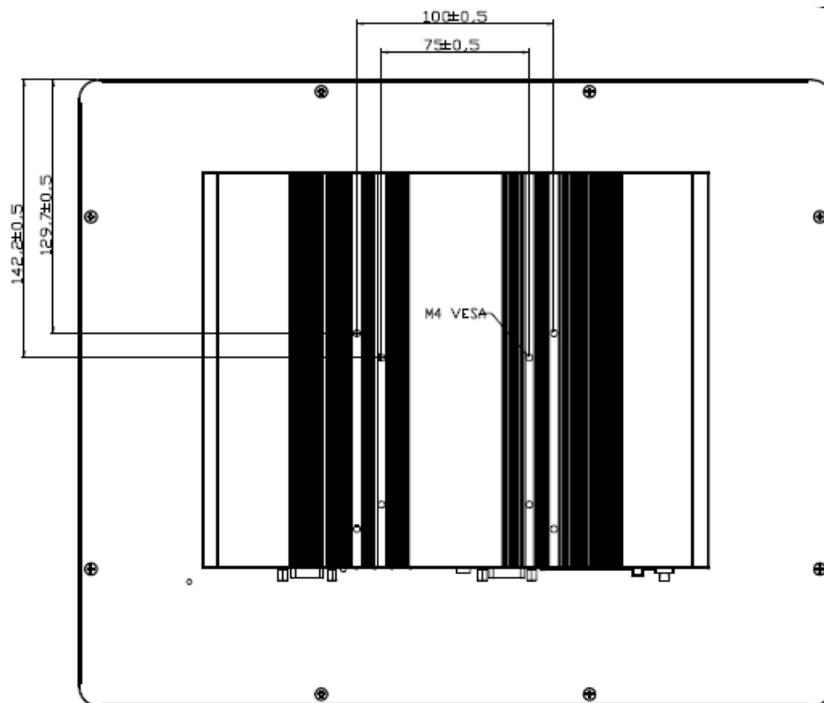
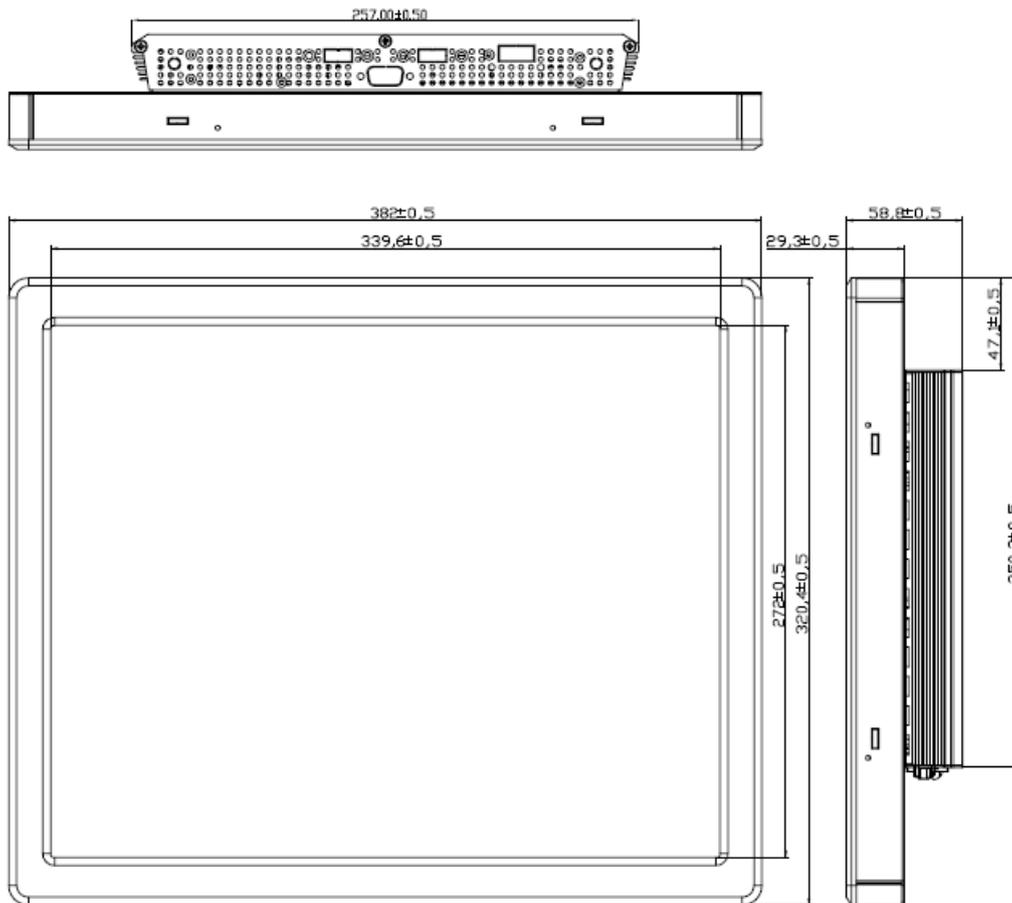
(Unit: mm)

1.5.3 LPC-1509 Front and Rear side



(Unit: mm)

1.5.4 LPC-1709 Front and Rear side



(Unit: mm)

# 2. Hardware Configuration



For advanced information, please refer to:

- 1- EBM-BYT User's Manual

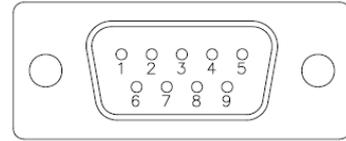
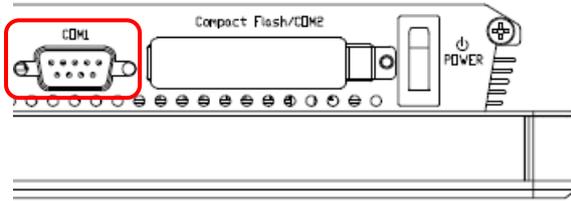


**Note:** If you need more information, please visit our website:

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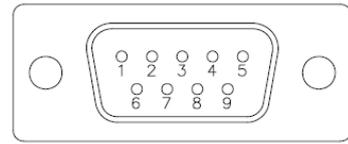
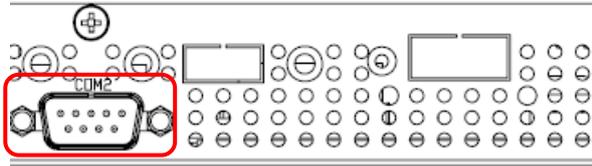
## 2.1. LPC-1009/1209/1509/1709 Series connector mapping

### 2.1.1 Serial port 1 connector (COM1)



Signal	PIN	PIN	Signal
NDCDA#_485TXN	1	6	NDSRA#
NRXDA_485TXP	2	7	NRTSA#
NTXDA_485RXP	3	8	NCTSA#
NDTRA#_485RXN	4	9	NRIA#
GND	5		

2.1.2 Serial port 2 connector (COM2)



**RS-232**

Signal	PIN	PIN	Signal
DCD	1	6	DSR
RXD	2	7	RTS
TXD	3	8	CTS
DTR	4	9	RI
GND	5		

**RS-422**

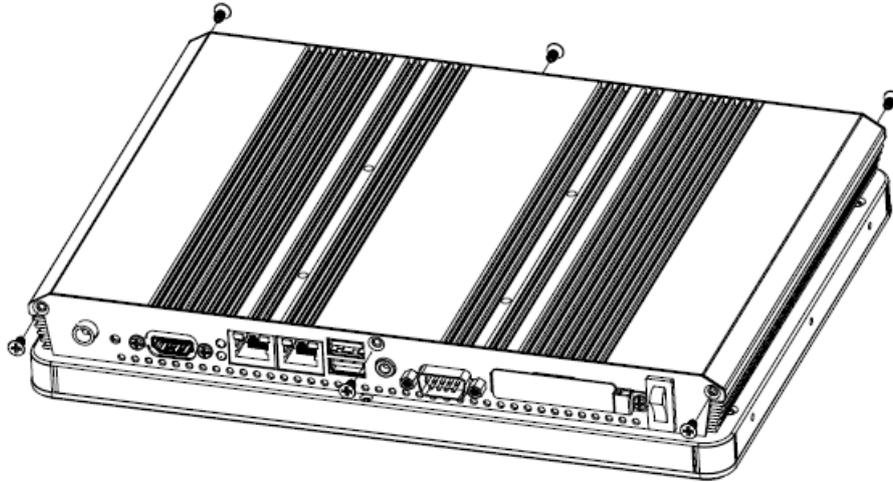
Signal	PIN	PIN	Signal
TxD-	1	6	NC
RxD+	2	7	NC
TxD+	3	8	NC
RxD-	4	9	NC
GND	5		

**RS-485**

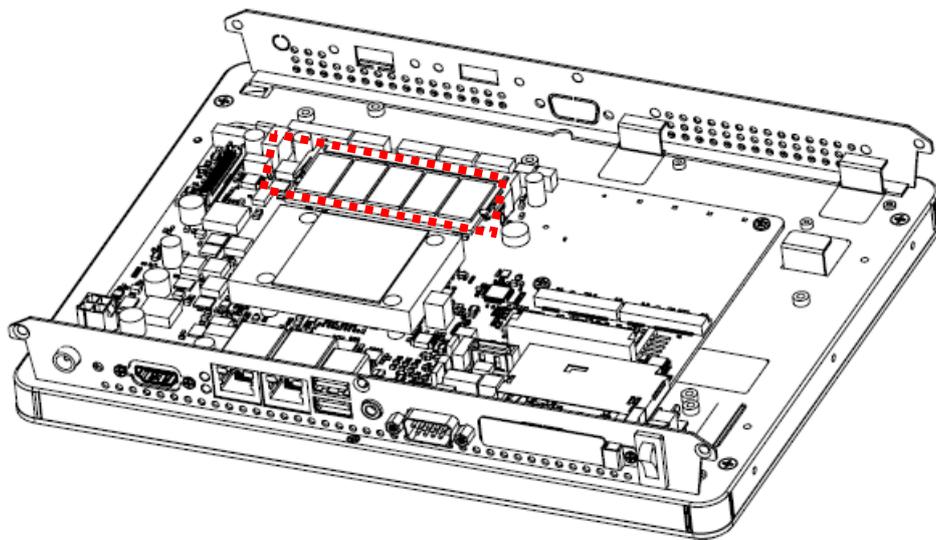
Signal	PIN	PIN	Signal
DATA-	1	6	NC
NC	2	7	NC
DATA+	3	8	NC
NC	4	9	NC
GND	5		

## 2.2 Installing Hard Disk & Memory (For LPC-1009/1209)

**Step 1.** Unfasten 6 screws from the case. Then take off the top chassis.

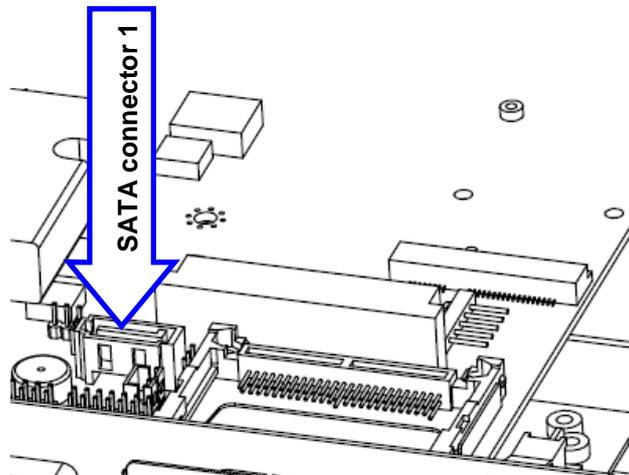


**Step 2.** Insert the SODIMM into the memory socket.

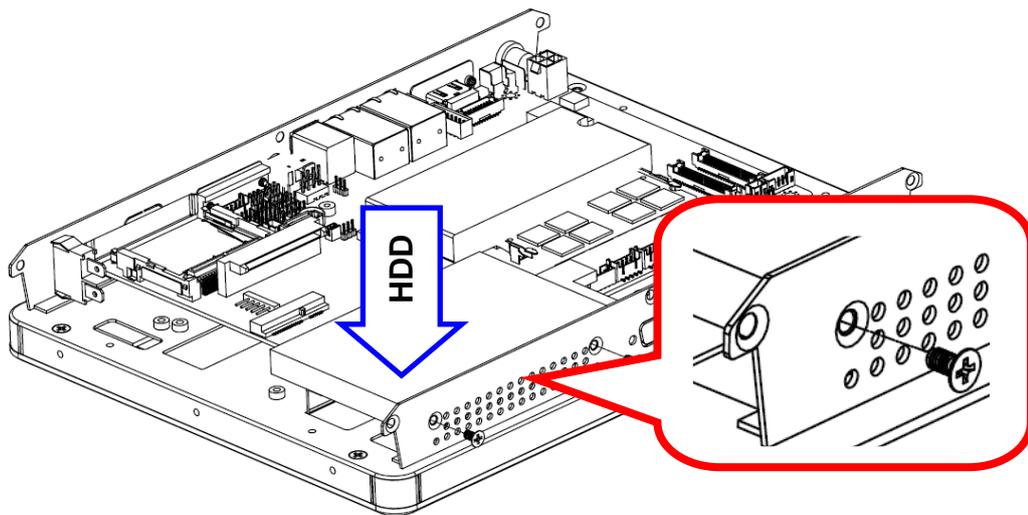


## LPC-1009/1209/1509/1709 Series

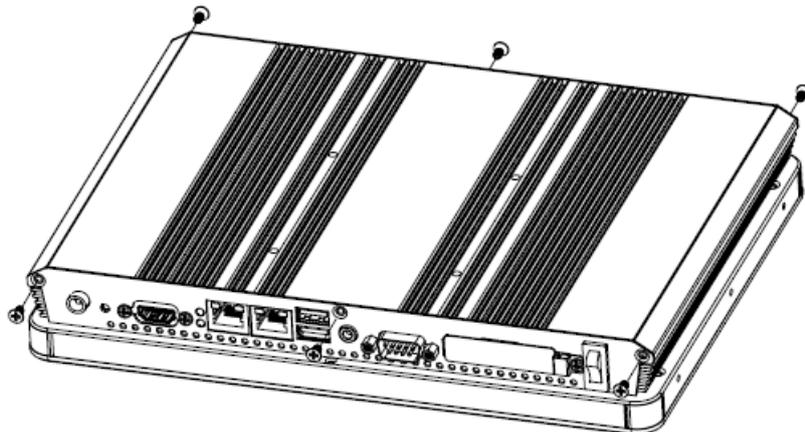
**Step 3-1. SATA HDD Installation:** By default, the SATA cables had been inserted to the according connectors. Just connect to SATA HDD with the two cables.



**Step 3-2.** Insert the HDD into the Drive Bay. Remember to place the HDD down to the bottom exactly in order to screw the device tightly.

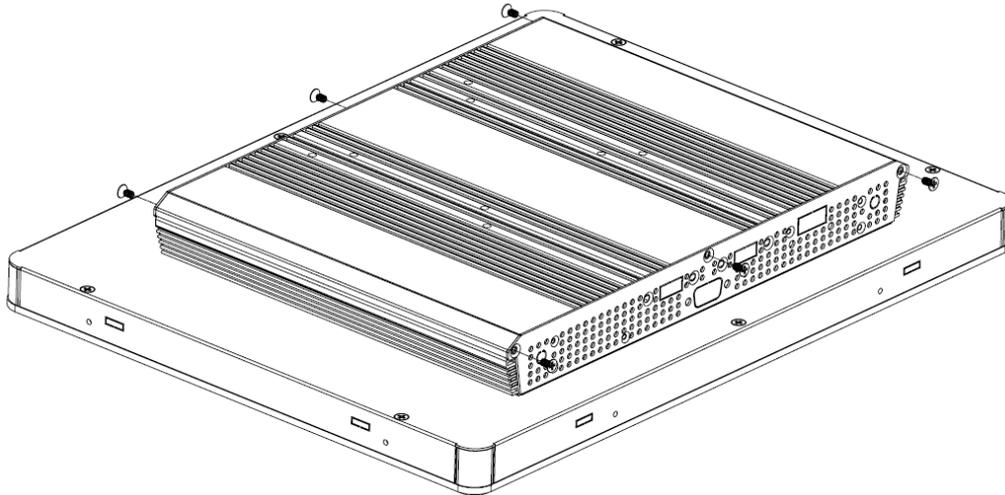


**Step 4.** Place back the chassis with 6 screws locked.

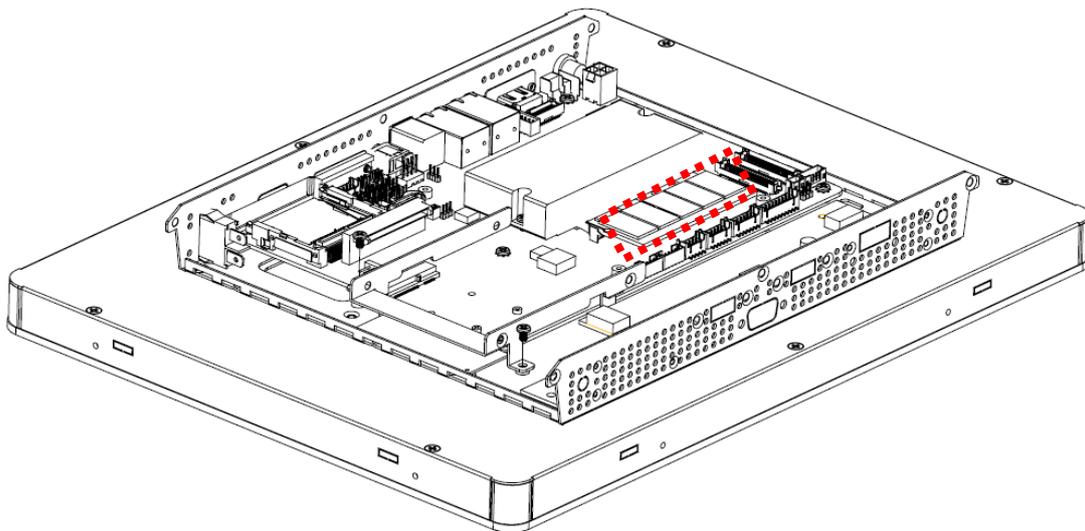


## 2.3 Installing Hard Disk & Memory (For LPC-1509/1709)

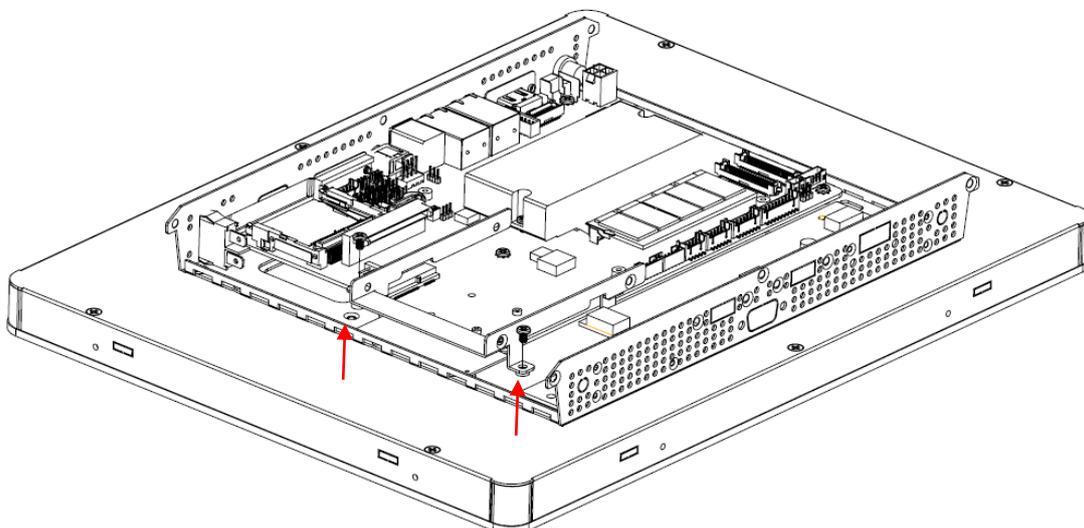
**Step 1. Memory Installation:** Unfasten 6 screws from the case to take off the top chassis.



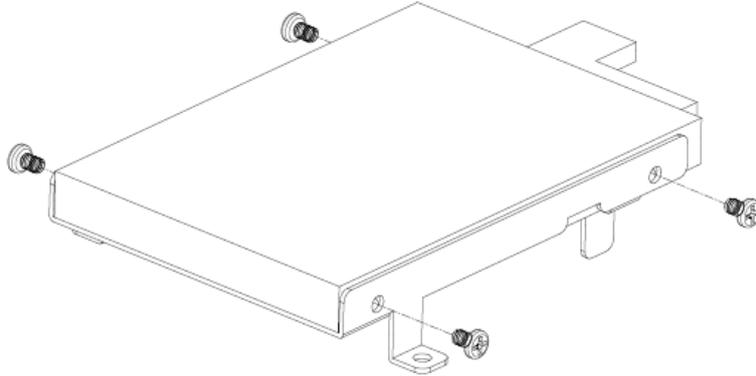
**Step 2.** Insert the SODIMM into the memory socket.



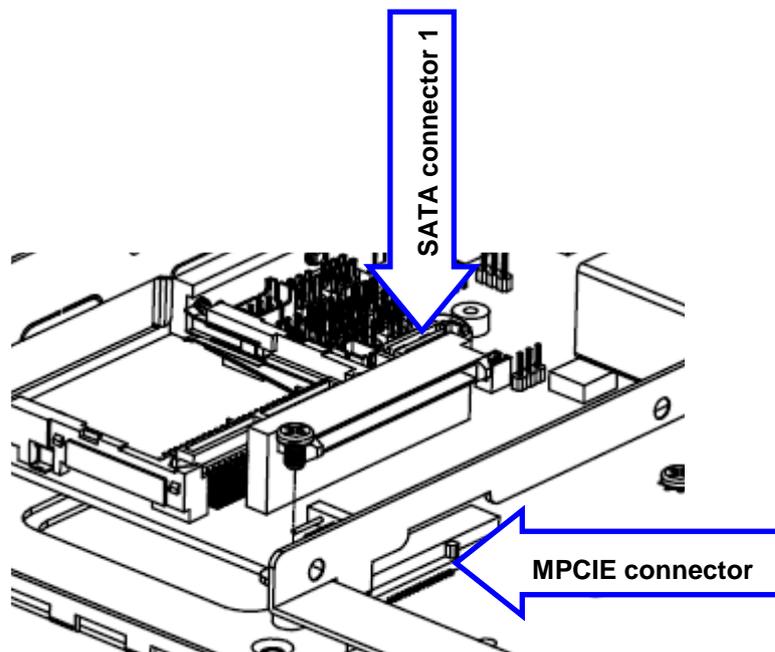
**Step 3-1. HDD Installation:** Unfasten 2 screws of the HDD bracket and take it off.



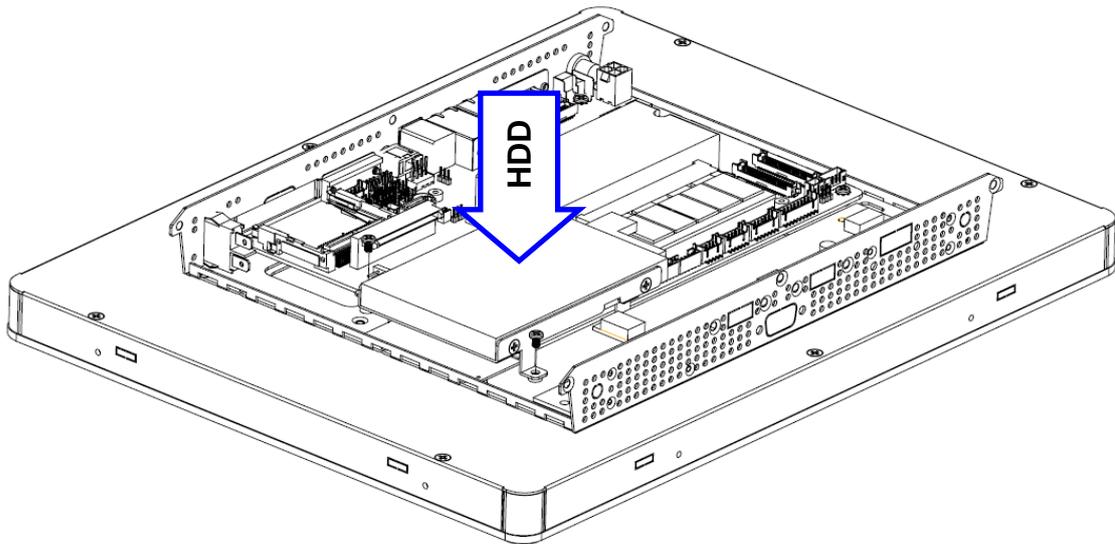
**Step 3-2.** Insert the HDD into the bracket and fasten 4 screws.



**Step 3-3. SATA HDD Installation:** By default, the SATA cables had been inserted to the according connectors. Just connect to SATA HDD with the two cables.



**Step 3-4.** Insert the HDD back and fasten 2 screws.



**Step 4.** Place back the chassis with 6 screws locked.

