

# FPC 08W2x Series

8" WSVGA TFT Fanless Touch Panel PC

## Quick Reference Guide

2<sup>nd</sup> Ed – 28 May, 2015

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## 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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As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into body, or (b) support or sustain life and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
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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.

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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/>

# 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 FPC 08W2x Series Panel PC
- 1 x CD/DVD-ROM contains the followings:
  - User's Manual (this manual in PDF file)
  - Ethernet driver and utilities
  - VGA drivers and utilities
  - Audio drivers and utilities
  - WiFi drivers and utilities
  - Touch controller drivers and utilities
- 1 x Power Adapter
- 4 x screws for VESA



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

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## 1.3 System Specifications

Panel		
	FPC-08W21	FPC-08W24
LCD size	8"	
Display type	WSVGA TFT	
Resolution	1024 x 600	
Color	256K	
Pixel pitch	0.1725mm(H) x 0.1656mm(V)	
Luminance	500 cd/m <sup>2</sup>	
Contrast ratio	700	
Viewing angle	2X	
Response time	20 ms	
Backlight	LED	
Touch Type	5-wire Resistive	
Touch Light Transmission	80%	
Touch Interface	USB onboard Touch Controller PenMount 6000	USB Touch Control Board EETI
System		
Board	ECM-LX800D	ECM-945GSE
CPU	Onboard AMD Geode LX800 @ 0.9 W 500 MHz with 128K L2 cache	Intel® Atom processor N270 1.6GHz CPU
Cooling Method	Passive CPU heatsink	
System Chipset	AMD Geode LX800/CS5536	Intel® 945GSE / ICH7-M
I/O Chip	Winbond W83627HG-AW	ITE IT8712F
Memory	Onboard 512MB DDR Memory	One 200-pin SODIMM socket supports up to 2GB DDR2 400/533MHz SDRAM
SSD	One CF socket by IDE secondary slave channel supports Type I / II Compact Flash Card	
Mouse & KB	1 x PS/2 Keyboard connector	n/a

## FPC-08W2x Series

Rear Panel I/O		
Serial Port	1 x RS-232, 1 x RS-232 or optional RS-422/485	
Ethernet	Dual Realtek RTL8101L LAN	Dual Marvell 88E8053 GigaLAN
WIFI	Optional USB WiFi 802.11 b/g (occupy one USB port)	Optional USB WiFi 802.11 b/g
VGA	1 x DB-15	
HDMI	n/a	n/a
Audio	Line out, Mic in (Realtek ALC203)	Line out, Mic in (Realtek ALC655)
USB	2 x USB 2.0	4 x USB 2.0
Mouse & KB	1 x PS/2 Keyboard connector	n/a
Mechanical & Environmental		
Color	Front panel Black	
	Rear panel Black	
System Power Requirement	+12V ~ +20V power input	+12V single power input
Power Adapter	Input: 100~250 Vdc/ 47~63 Hz; Output: +12 Vdc / 5 A (60W)	
Operating Temperature	-10°C to 60°C	0°C to 40°C
Storage Temperature	-20°C to 70°C	-10°C to 50°C
Relative Humidity	10% to 95% @ 40°C, non-condensing	
Mounting	Wall/Stand/VESA 75 mm X 75 mm	
Dimensions	225 x 129 x 40.4 mm	
Weight	1.26 Kgs	

Panel 		
	FPC-08W25	FPC-08W27
LCD size	8"	
Display type	WSVGA TFT	
Resolution	1024 x 600	
Color	256K	
Pixel pitch	0.1725mm(H) x 0.1656mm(V)	
Luminance	500 cd/m <sup>2</sup>	
Contrast ratio	700	
Viewing angle	2X	
Response time	20 ms	
Backlight	LED	
Touch Type	5-wire Resistive	
Touch Light Transmission	80%	
Touch Interface	USB onboard Touch Controller PenMount 6000	USB Touch Control Board EETI
System 		
Board	ECM-PNV	ECM-CDV
CPU	Onboard Intel® Atom™ D525 Dual-Core 1.8 GHz CPU	Onboard Intel® Cedar View D2550 Dual-Core 1.86 GHz CPU
Cooling Method	Passive CPU heatsink	Passive CPU heatsink
System Chipset	Intel® ICH8-M	Intel® NM10
I/O Chip	Winbond W83627DHG	Nuvoton W83627DHG-P
Memory	One SODIMM socket supports up to 4GB DDR3 800 SDRAM	One SODIMM socket supports up to 4GB DDR3 800/1066 SDRAM
SSD	One CF socket by IDE secondary slave channel supports Type I / II Compact Flash Card	

## FPC-08W2x Series

Rear Panel I/O		
Serial Port	1 x RS-232, 1 x RS-232 or optional RS-422/485	
Ethernet	Dual Intel 82574L Gigabit LAN	Dual Intel® 82574L Gigabit LAN
WIFI	Optional USB WiFi 802.11 b/g	Optional USB WiFi 802.11 b/g
VGA	1 x DB-15	
HDMI	n/a	1 x HDMI
Audio	1 x Line-out, 1 x Mic-in (Realtek ALC888 Supports 5.1-CH Audio)	1 x Line-out, 1 x Mic-in (Realtek ALC892 Supports 5.1-CH Audio)
USB	4 x USB 2.0	3 x USB 2.0
Mouse & KB	1 x PS/2 Keyboard connector	n/a
Mechanical & Environmental		
Color	Front panel Black	
	Rear panel Black	
System Power Requirement	+12V ~ +26V power input	+12V ~ +26V power input
Power Adapter	Input: 100 ~ 250Vdc/ 47 ~ 63Hz; Output: 60W Adapter (12V @ 5A Adapter)	
Operating Temperature	0°C to 40°C	-10°C to 60°C
Storage Temperature	-10°C to 50°C	-20°C to 70°C
Relative Humidity	10% to 95% @ 40°C, non-condensing	
Mounting	Wall/Stand/VESA 75 mm X 75 mm	
Dimensions	225 x 129 x 43.4 mm	
Weight	1.27 Kgs	

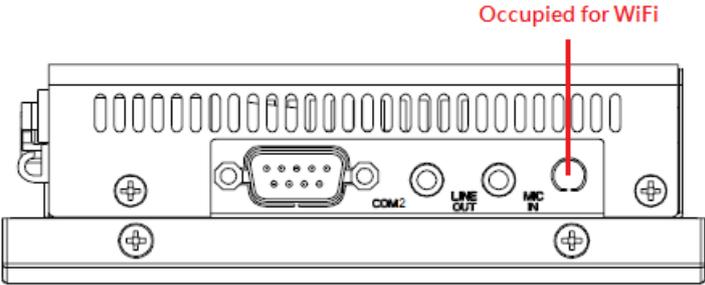
<b>Panel</b>	
	<b>FPC-08W29</b>
LCD size	8"
Display type	WSVGA TFT
Resolution	1024 x 600
Pixel pitch	0.1725mm(W) x 0.1656mm(H)
Luminance	500 cd/m <sup>2</sup>
Contrast ratio	700
Viewing angle	70 (U), 75 (D), 75 (L), 75 (R)
Response time	20 ms
Backlight	LED
Touch Type	5 Wires resistive
Touch Light Transmission	80%
Touch Controller	Onboard USB touch (PenMount)
<b>System</b>	
SBC	ECM-BYT
Processor	Intel® Atom™ SoC E3845 4-Core 1.91GHz processor
System Chipset	Intel® Valleyview SoC
I/O Chipset	Nuvoton W83627DHG-P
System Memory	1 x 204-Pin DDR3L 1333MHz SO-DIMM up to 8 GB Processor E3845 only support 1333MHz
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec and 1sec. or 1min./step
<b>Expansion &amp; Storage</b>	
Expansion	1 x Mini PCIe Supports mSATA
Storage	1 x CompactFlash Type I/II Socket
<b>I/O</b>	
USB	3 x USB 2.0 1 x USB 3.0
COM Port	1 x RS-232/422/485 1 x RS-232
<b>Audio</b>	
Chipset	Realtek ALC892, Support 5.1-CH
Audio Interface	Mic-In and Line-Out
<b>Ethernet</b>	
Chipset	2 x Intel® I211AT
Ethernet Interface	10/100/1000 Base-Tx GbE compatible
LAN Port	2 x RJ-45
<b>Power Requirement</b>	

## FPC-08W2x Series

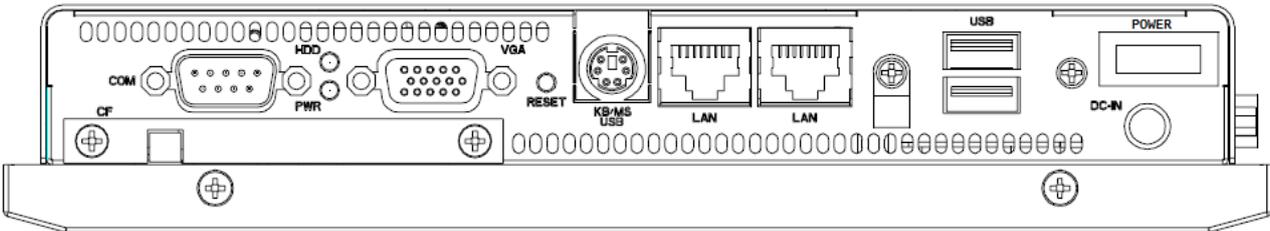
<b>Power Requirement</b>	+12V ~ +26V
<b>ACPI</b>	Single Power ATX Support S0, S1, S3, S4, S5 ACPI 3.0 Compliant
<b>Power Type</b>	AT/ATX (ATX is default setting)
<b>Adapter</b>	Input: 100 ~ 240Vac/ 50 ~ 60Hz Output: 60W Adapter (12V @ 5A Adapter) AC-DC Adapter
<b>Mechanical &amp; Environmental</b> 	
<b>System Fan</b>	Fanless
<b>Construction - Front</b>	Metal
<b>Construction – Rear</b>	Aluminum + Metal
<b>Dimension</b>	225 x 129 x 43.4 mm
<b>Weight</b>	1.27 Kgs
<b>Operating Temperature</b>	0°C ~ 40°C (32°F ~ 104°F)
<b>Storage Temperature</b>	-10°C ~ 50°C (14°F ~ 122°F)
<b>Operating Humidity</b>	0% ~ 90% Relative Humidity, Non-condensing
<b>Vibration Test</b>	With SSD/mSATA : 1.5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 30min/axis
<b>Shock Test</b>	With CF/SSD : 10Grms, IEC 60068-2-27, Half Sine, 11ms
<b>Certifications &amp; Software Support</b> 	
<b>Certification Information</b>	CE FCC Class B
<b>OS Information</b>	Win 7, Win 8, Linux

**1.4 System Overview**

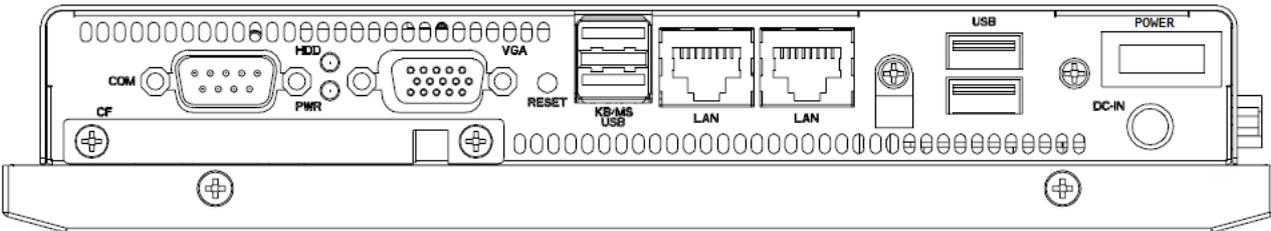
**1.4.1 FPC-08W2x Series Right View**



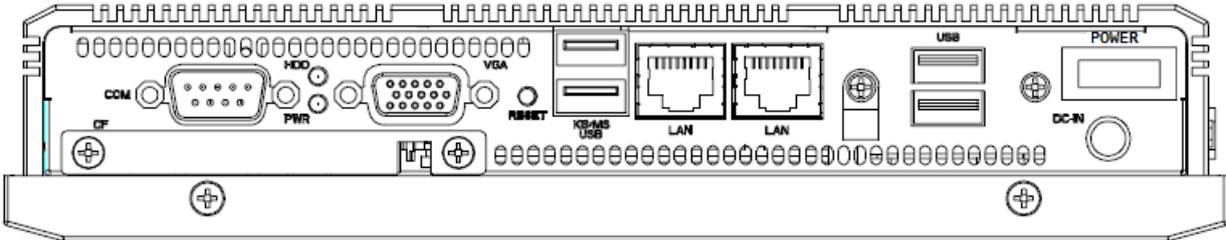
**1.4.2 FPC-08W21 Rear View**



**1.4.3 FPC-08W24 Rear View**

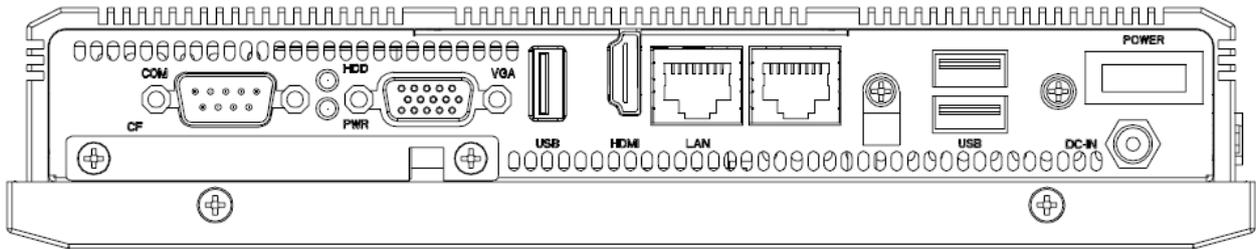


**1.4.4 FPC-08W25 Rear View**

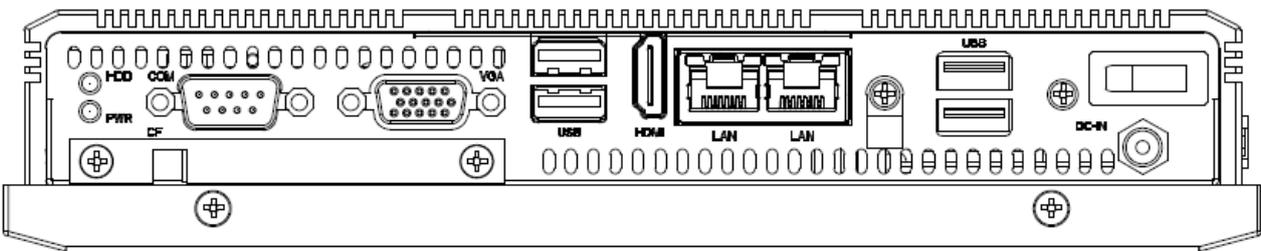


## FPC-08W2x Series

### 1.4.5 FPC-08W27 Rear View



### 1.4.6 FPC-08W29 Rear View



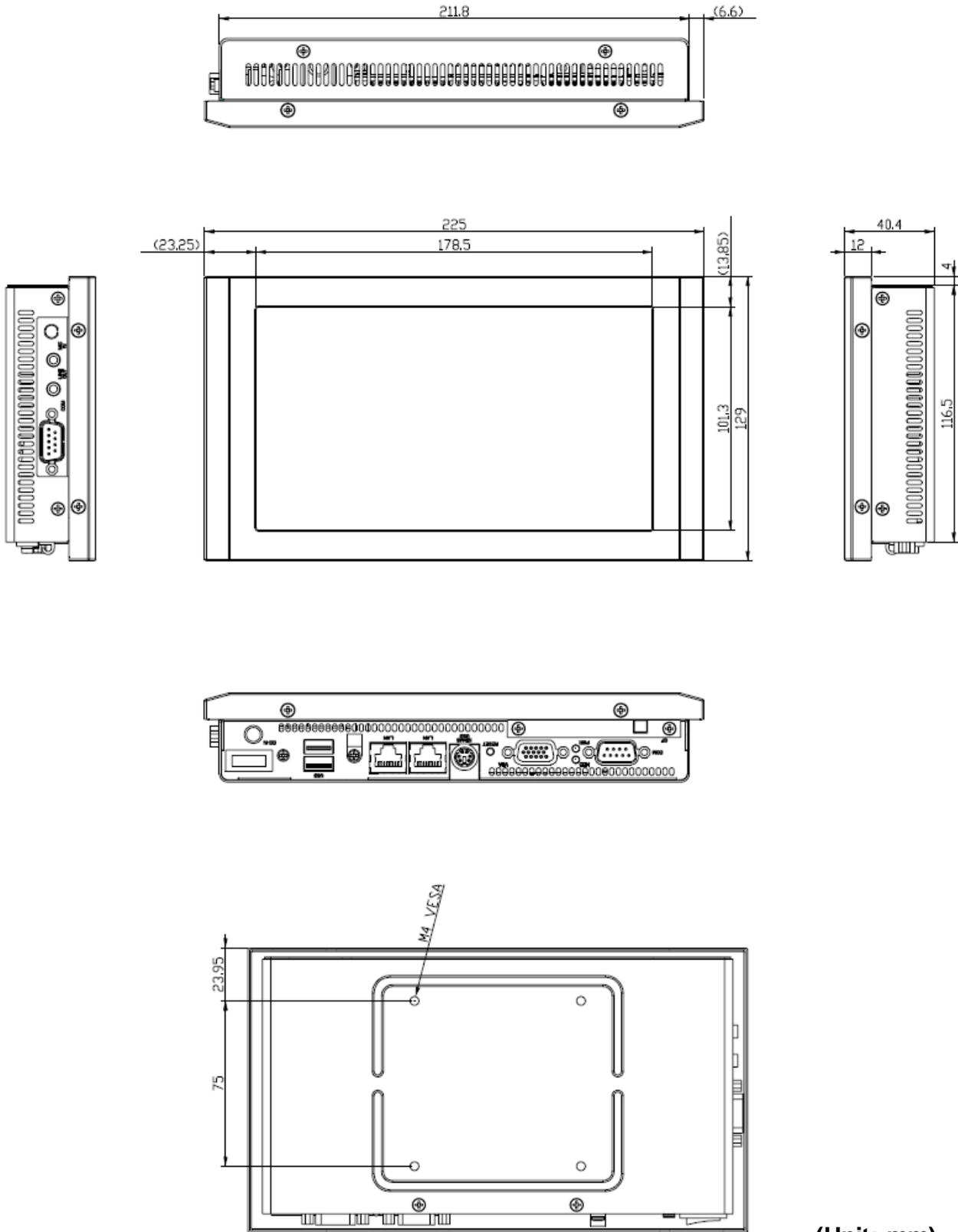
## Connectors

Label	Function	Note
CF	CompactFlash Type I/II socket with cover	
COM	Serial port 1 & 2 (FPC-08W21, FPC-08W24, FPC-08W25, and FPC-08W27 Optional RS-422/485 for COM2) (FPC-08W29 Optional RS-422/485 for COM1 by BIOS setting)	DB-9 male connector
DC in	DC Power-in connector	
KB/MS/USB	2 x USB 2.0 connector, PS/2 keyboard & mouse connector (FPC-08W21) 4 x USB 2.0 connector (FPC-08W24) 4 x USB 2.0 connector, PS/2 keyboard & mouse connector (FPC-08W25) 3 x USB 2.0 connector (FPC-08W27) 3 x USB 2.0 connector, 1 x USB 3.0 connector (FPC-08W29)	6-pin Mini DIN or dual USB decks
LAN	Ethernet connector	RJ-45
LINE OUT	Line-out audio jack	
Mic In	Mic-in audio jack	

<b>HDD</b>	HDD Indicator	
<b>HDMI</b>	HDMI connector ( <a href="#">FPC-08W27</a> , <a href="#">FPC-08W29</a> )	
<b>PWR</b>	Power LED	
<b>Reset</b>	Reset button	
<b>VGA</b>	CRT connector	DB-15 female connector
<b>Power</b>	Power switch	

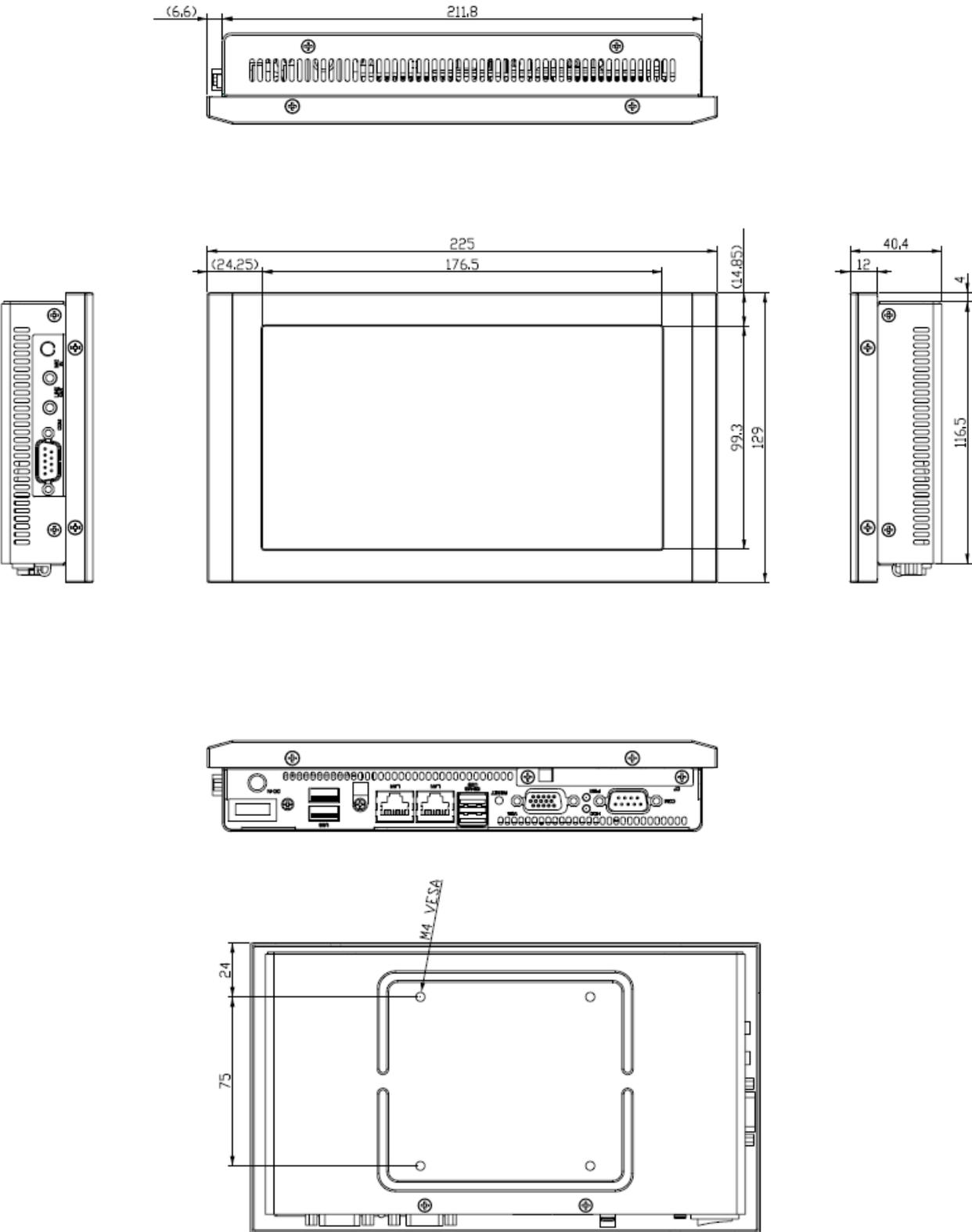
## 1.5 System Dimensions

### 1.5.1 FPC-08W21



(Unit: mm)

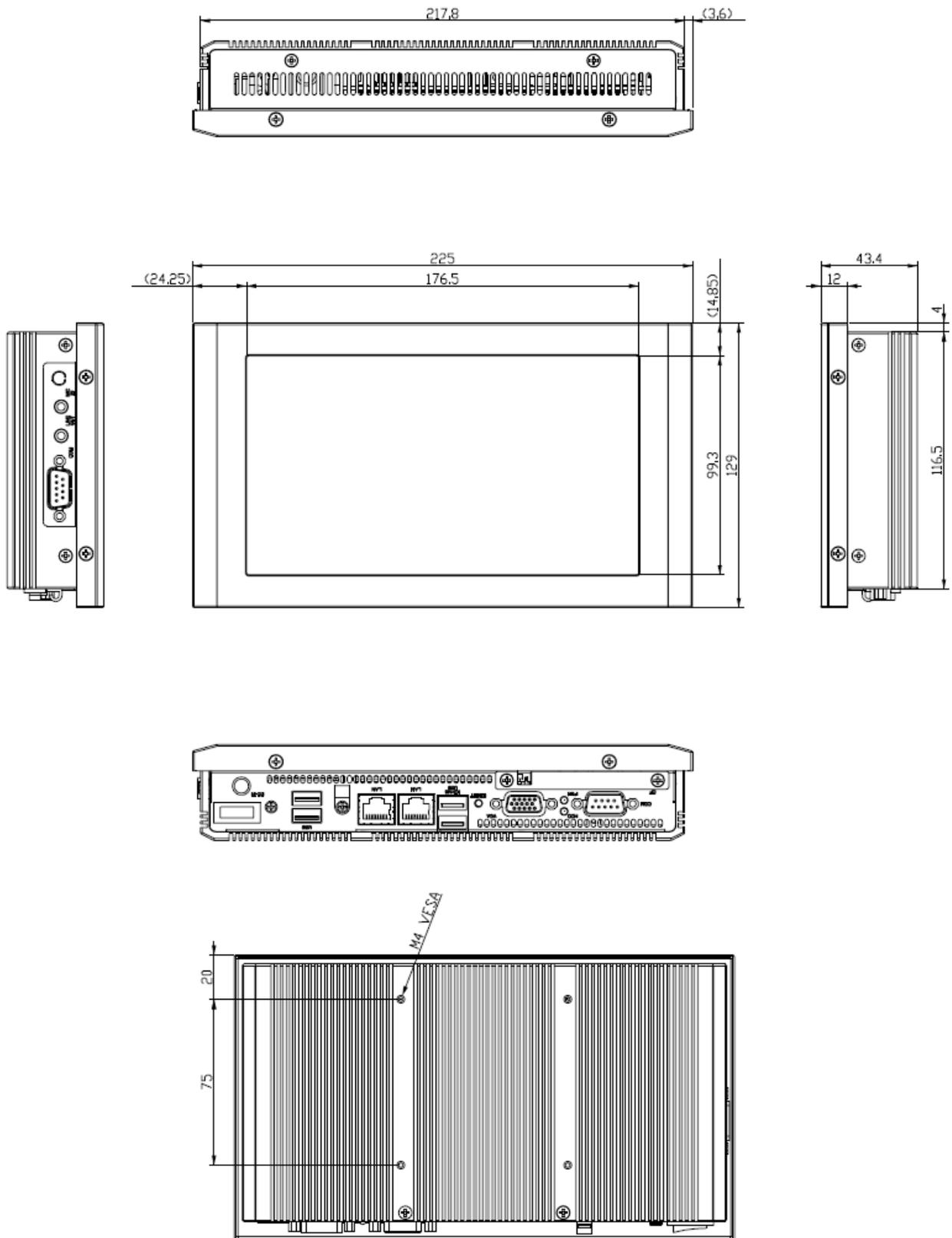
1.5.2 FPC-08W24



(Unit: mm)

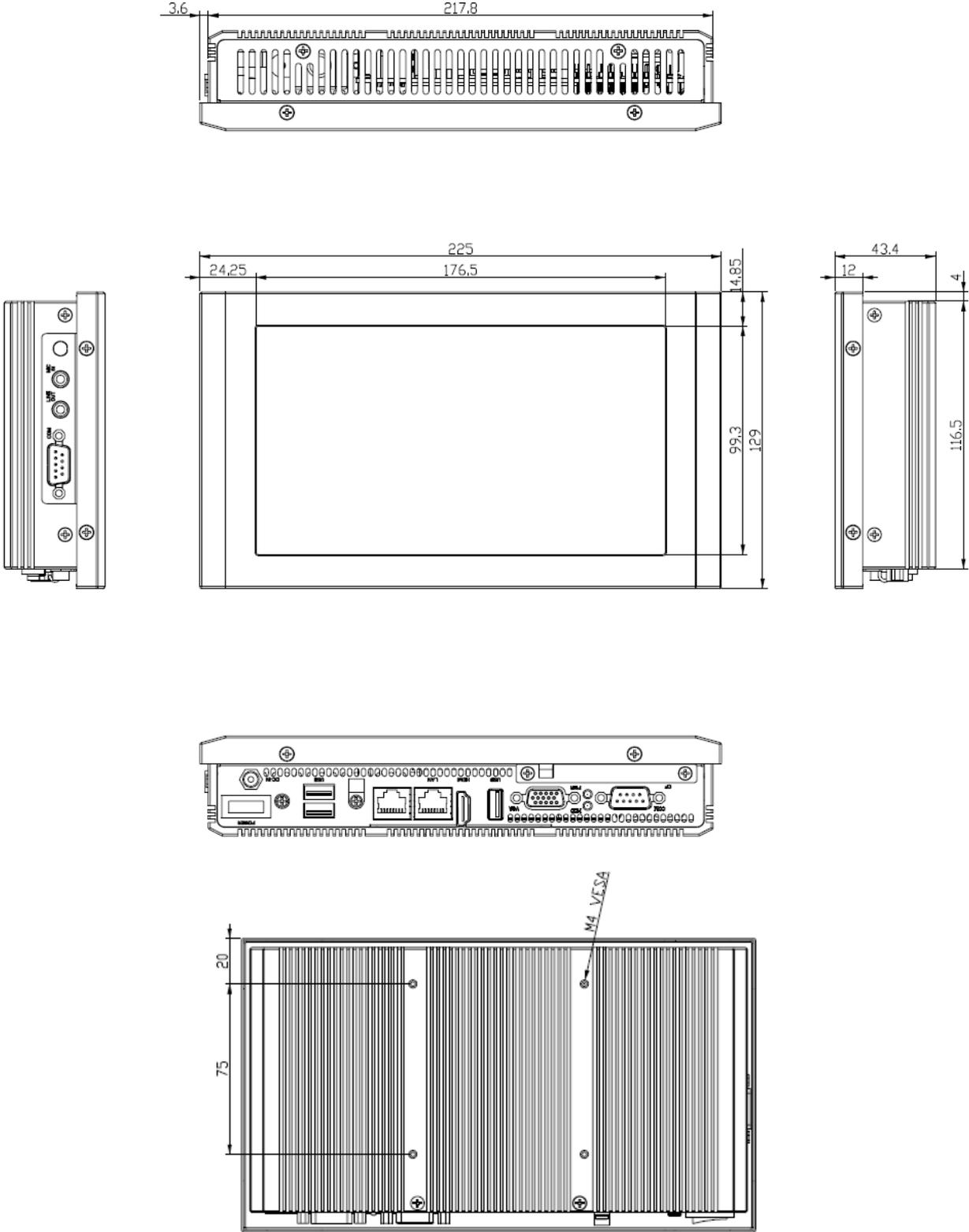
# FPC-08W2x Series

## 1.5.3 FPC-08W25



(Unit: mm)

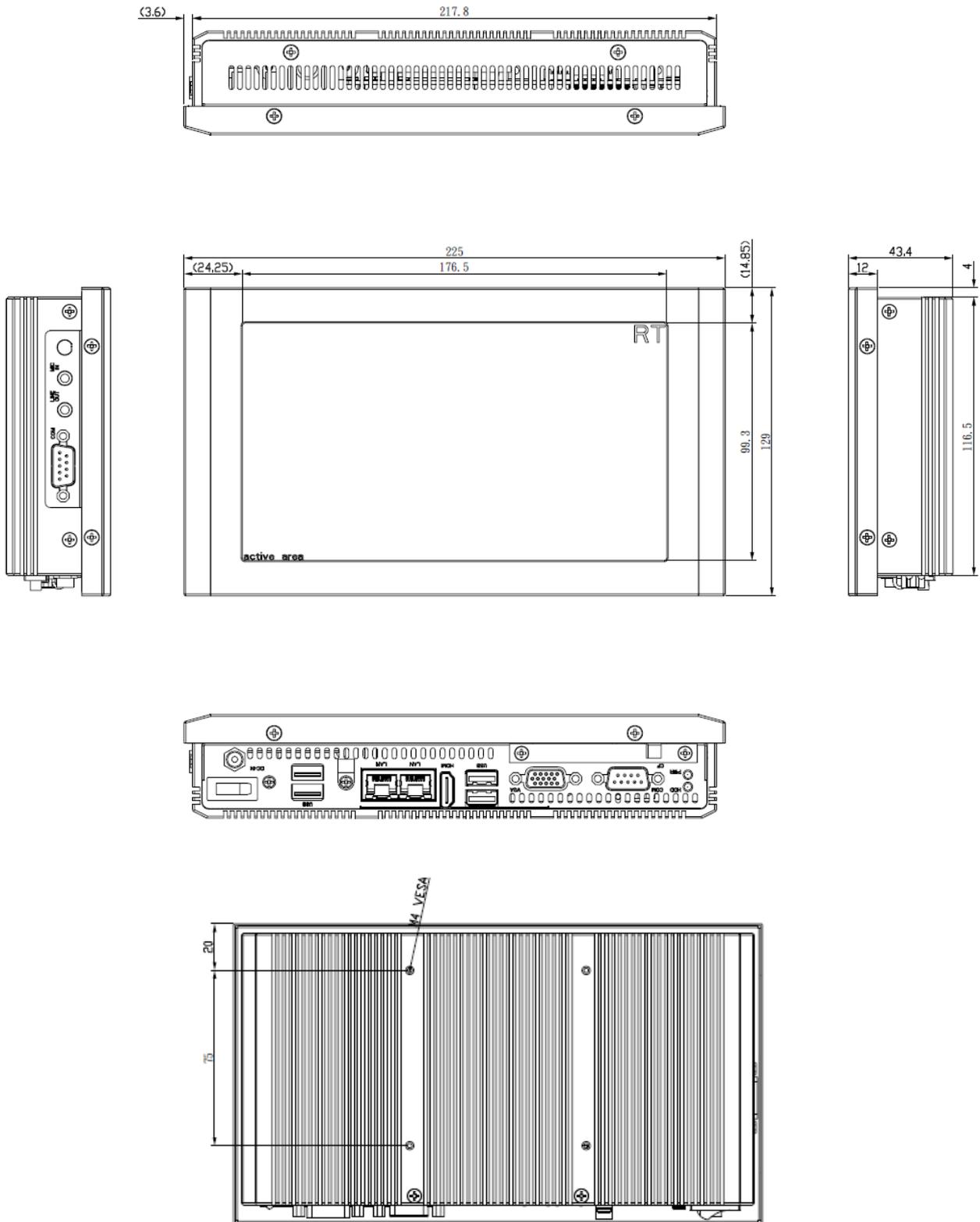
1.5.4 FPC-08W27



(Unit: mm)

# FPC-08W2x Series

## 1.5.5 FPC-08W29



(Unit: mm)

## 2. Hardware Configuration

- Please refer to ECM-LX800D, ECM-945GSE, ECM-PNV, ECM-CDV and ECM-BYT User's Manual for further information.

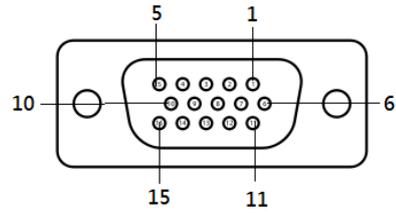
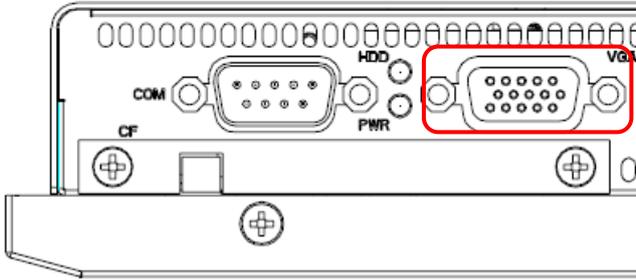


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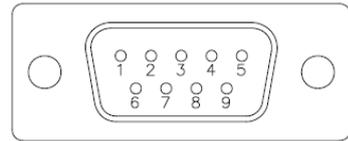
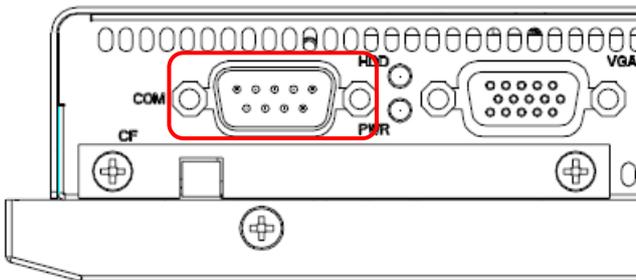
**2.1 FPC 08W21/08W24/08W25/08W27 connector setting**

**2.1.1 VGA connector (VGA)**



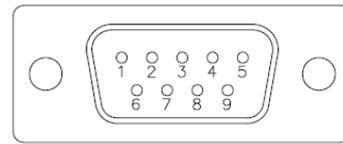
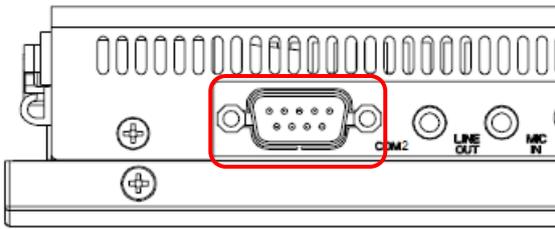
PIN	Signal	PIN	Signal	PIN	Signal
1	R	6	GND	11	NC
2	G	7	GND	12	DATA
3	B	8	GND	13	HSYNC
4	NC	9	+5V	14	VSYNC
5	GND	10	GND	15	CLK

**2.1.2 External Serial Port 1 connector (COM1)**



Signal	PIN	PIN	Signal
DCD#	1	6	DSR#
RXDD#	2	7	RTS#
TXDD#	3	8	CTS#
DTR#	4	9	RI#
GND	5		

2.1.3 External Serial Port 2 connector (COM2)



In RS-232 Mode

Signal	PIN	PIN	Signal
DCD#	1	6	DSR#
RXDD#	2	7	RTS#
TXDD#	3	8	CTS#
DTR#	4	9	RI#
GND	5		

In RS-422 Mode

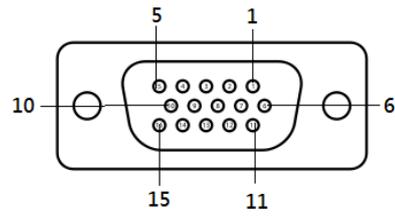
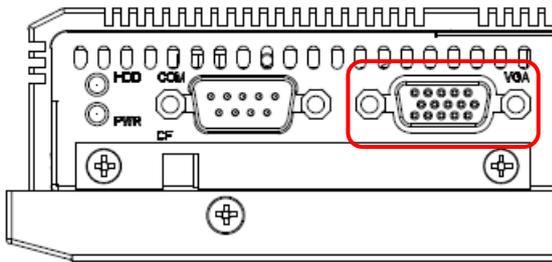
Signal	PIN	PIN	Signal
TxD1-	1	6	NC
RxD1-	2	7	NC
TxD1+	3	8	NC
RxD1+	4	9	NC
GND	5		

In RS-485 Mode

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

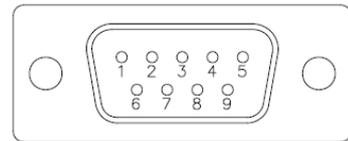
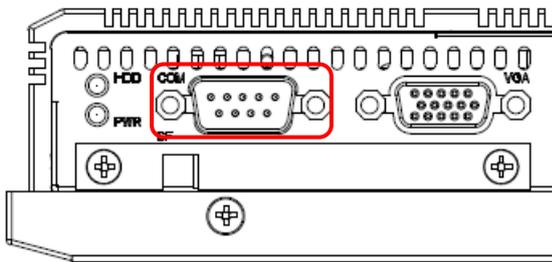
## 2.2 FPC 08W29 connector setting

### 2.2.1 VGA connector (VGA)



PIN	Signal	PIN	Signal	PIN	Signal
1	R	6	GND	11	NC
2	G	7	GND	12	DATA
3	B	8	GND	13	HSYNC
4	NC	9	+5V	14	VSYNC
5	GND	10	GND	15	CLK

### 2.2.1 External Serial Port 1 connector (COM1)

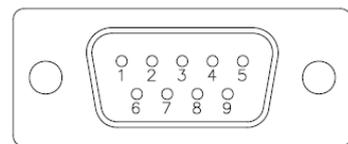
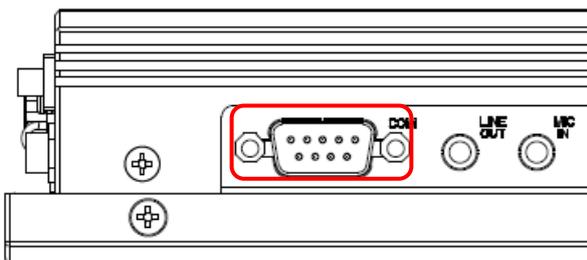


Signal	PIN	PIN	Signal
NDCDA#_485TXN	1	6	NDSRA#
NRXDA_485TXP	2	7	RTSA#
NTXDA_485RXP	3	8	NCTSA#
NDTRA#_485RXN	4	9	NRIA#
GND	5	10	NC

**Note :**

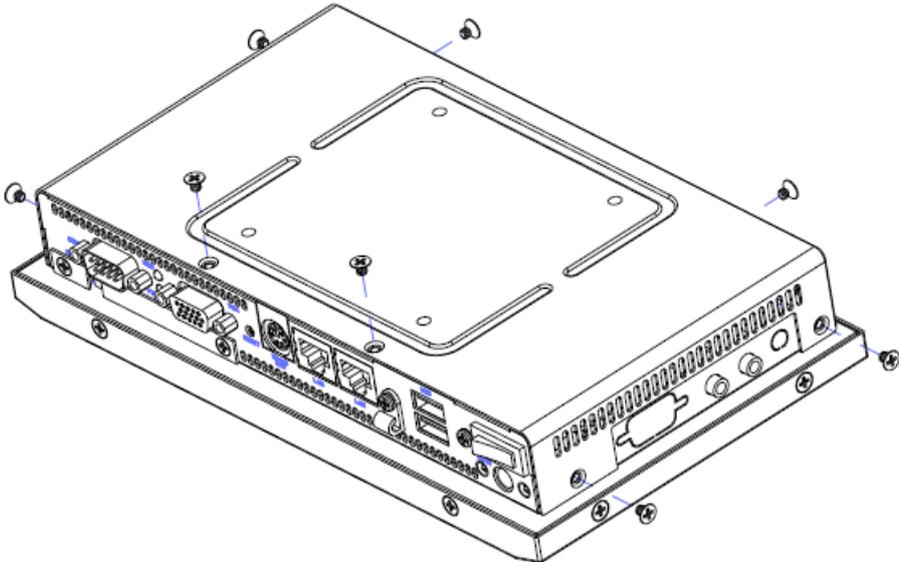
COM1 support RS-422/485 by BIOS setting.

### 2.2.2 External Serial Port 2 connector (COM2)

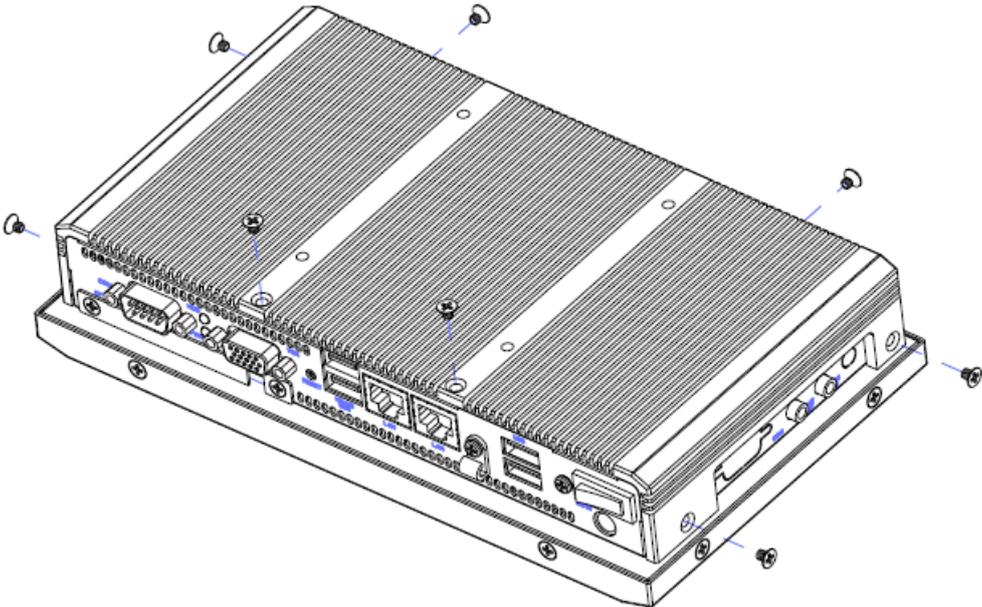


Signal	PIN	PIN	Signal
DCD#	1	6	DSR#
RXDD#	2	7	RTS#
TXDD#	3	8	CTS#
DTR#	4	9	RI#
GND	5		

2.3 Installing Memory



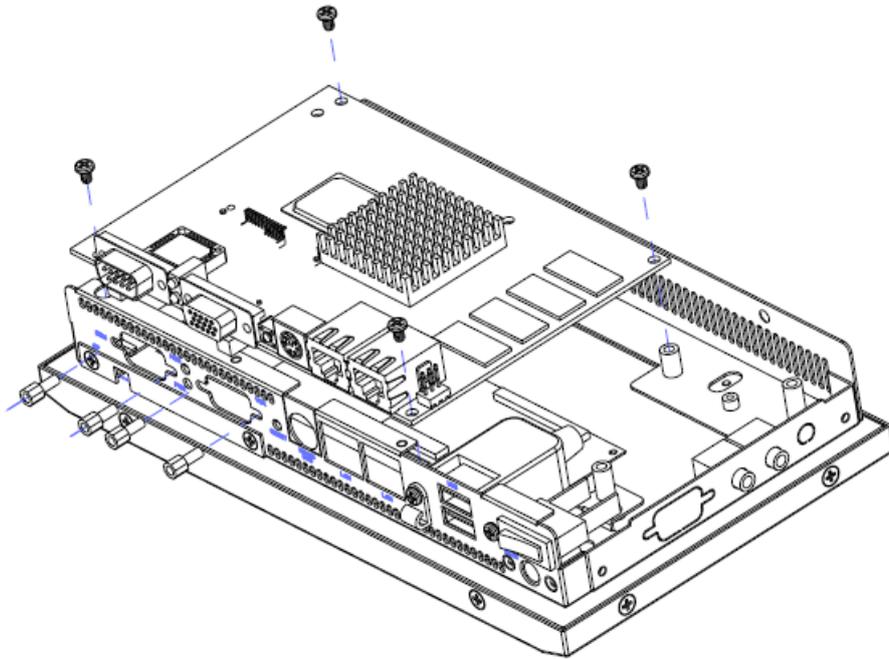
(FPC-08W21, FPC-08W24)



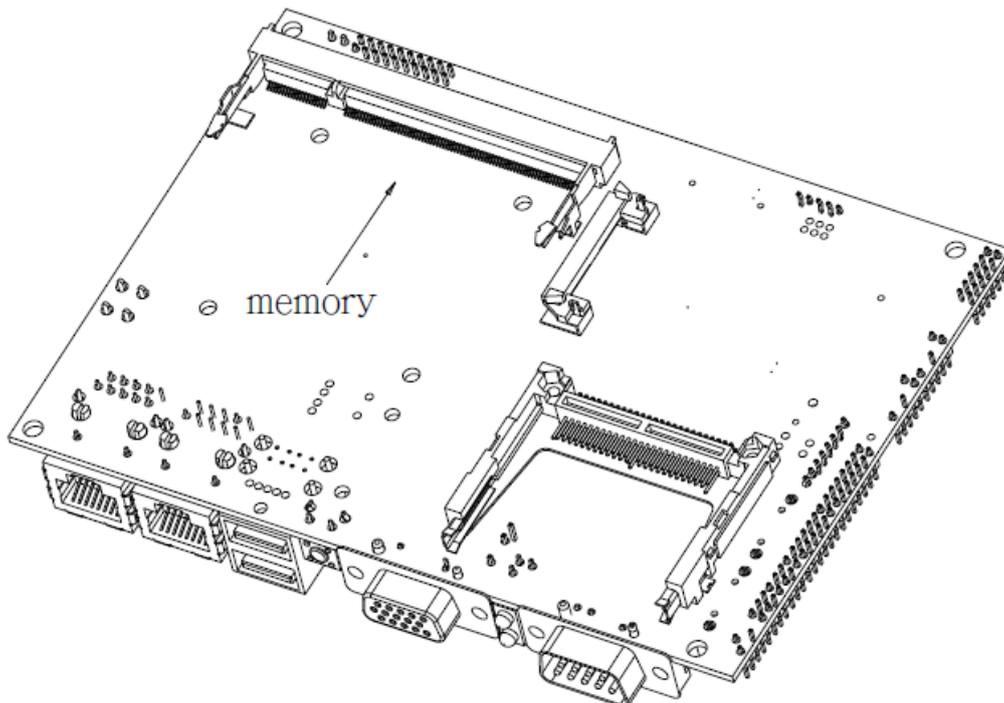
(FPC-08W25, FPC-08W27)

**Step 1.** Unfasten 8 screws from the case to take off the top chassis.

## FPC-08W2x Series

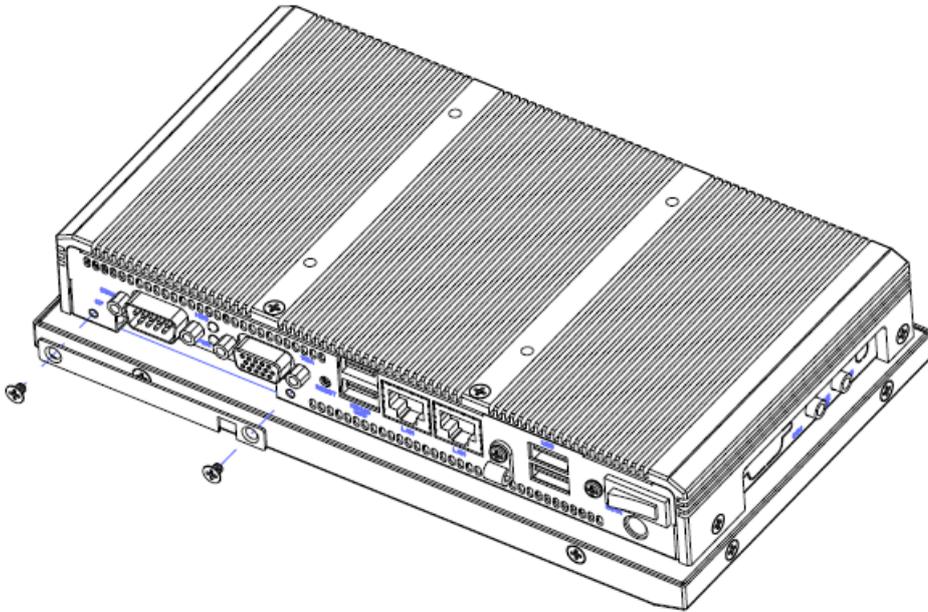


**Step 2.** Remove 8 screws as above and have the box pc and board separated.

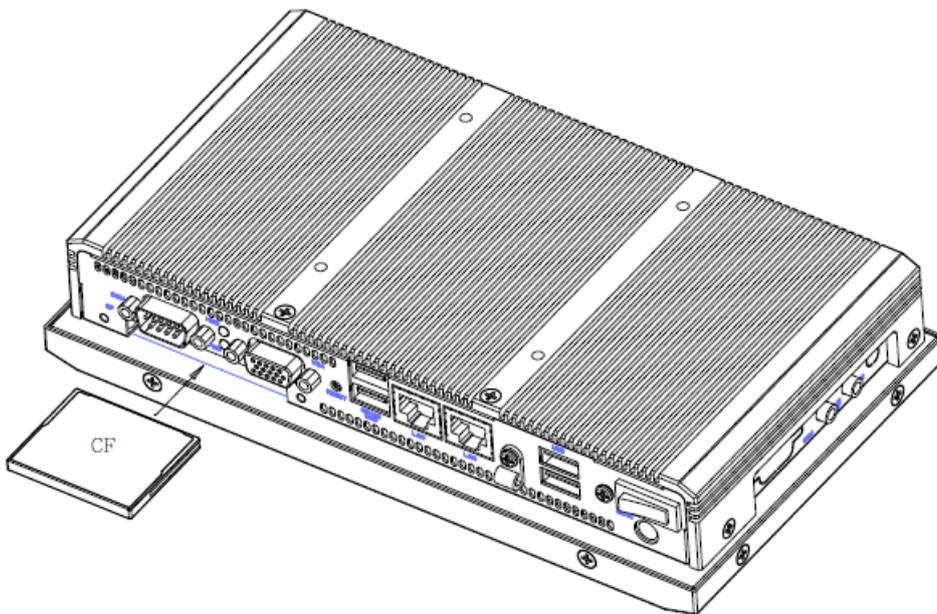


**Step 3.** Insert the SODIMM into the memory socket.

## 2.4 Installing CF Card



**Step 1.** Unlock 2 screws from the rear side of the panel PC as above.



**Step 2.** Put the CF card into the socket and fasten 2 screws back.

