

EmCORE-i230G

3.5" Compact Board Quick Installation Guide

Version 1.0

Form Factor
3.5" Compact Board

CPU
Intel® Atom™ Processor E3800 family

Video
Dual Channel 24-bit LVDS, Analog RGB, Vertical HDMI

I/O
SATA/ CFast/ USB/ COM/ DIO

LAN
2 x Realtek® RTL8111 PCIe GbE controllers

Audio
Realtek ALC662 HD Audio CODEC, MIC-in/ Line-out/ Line-in

◆ Technical Support

If you have any technical difficulties, please consult the user's manual first at:
<ftp://ftp.arbor.com.tw/pub/manual>

Contact our customer service at the following addresses if your problem persists.
<http://www.arbor.com.tw>
E-mail: info@arbor.com.tw

◆ Declaration of Conformity

FCC Class A

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.



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Packing List

Before starting with the installation, make sure the following items are shipped:



1 x EmCORE-i230G 3.5" Compact Board with heatsink



1 x Driver CD



1 x Quick Installation Guide

If any of the aforelisted items is damaged or missing, contact your vendor immediately.

Ordering Information

EmCORE-i230G-E3825	Intel® Atom™ Processor E3825 3.5" Compact Board
EmCORE-i230G-WT-E3825	Wide range temperature Intel® Atom™ Processor E3825 3.5" Compact Board
EmCORE-i230G-E3845	Intel® Atom™ Processor E3845 3.5" Compact Board
EmCORE-i230G-WT-E3845	Wide range temperature Intel® Atom™ Processor E3845 3.5" Compact Board
CBK-08-230G-00	Cable kit 1 x AUDIO cable 2 x COM port latching cables 1 x Keyboard & mouse latching y-cable 1 x SATA cable 1 x SATA power cable 2 x USB cables

Find Device Drivers on CD

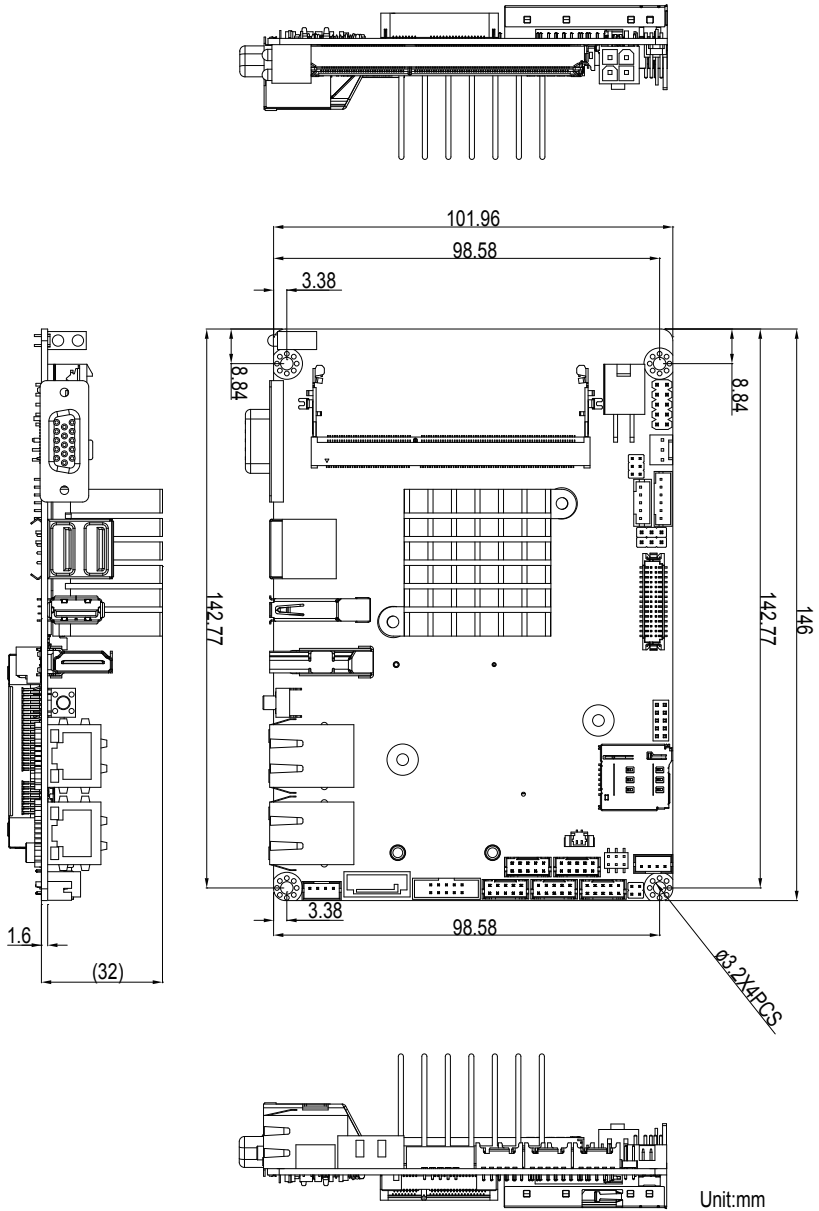
Windows 7

Device	Driver Path
Audio	\Audio\32bit_Win7_Win8_Win81_R275
	\Audio\64bit_Win7_Win8_Win81_R275
Chipset	\Chipset\SetupChipset_10.0.13_PC
Ethernet	\Ethernet\Realtek\Win7\Install_Win7_7085_05222014
GPIO	\GPIO\windows 7 32_64\Intel Atom E3800 Win7 IO Drivers_Gold_v1.0 package 501232_20140211
Graphic	\Graphics\WIN7_32\Intel_EMGD.WIN7_PC_Version_36_15_0_1073
	\Graphics\WIN7_64\Intel_EMGD.WIN7_PC_Version_37_15_0_1073
TXE	\TXE\Installers (Only for 64-bit)
USB3.0	\USB3.0\Intel(R) USB 3.0 eXtensible Host Controller_Win7_32bit_64bit_R3.0.0.33
Serial IO	\Serial IO\Intel Processor IO Drivers_Win7_32bit_64bit_Gold_v2.0

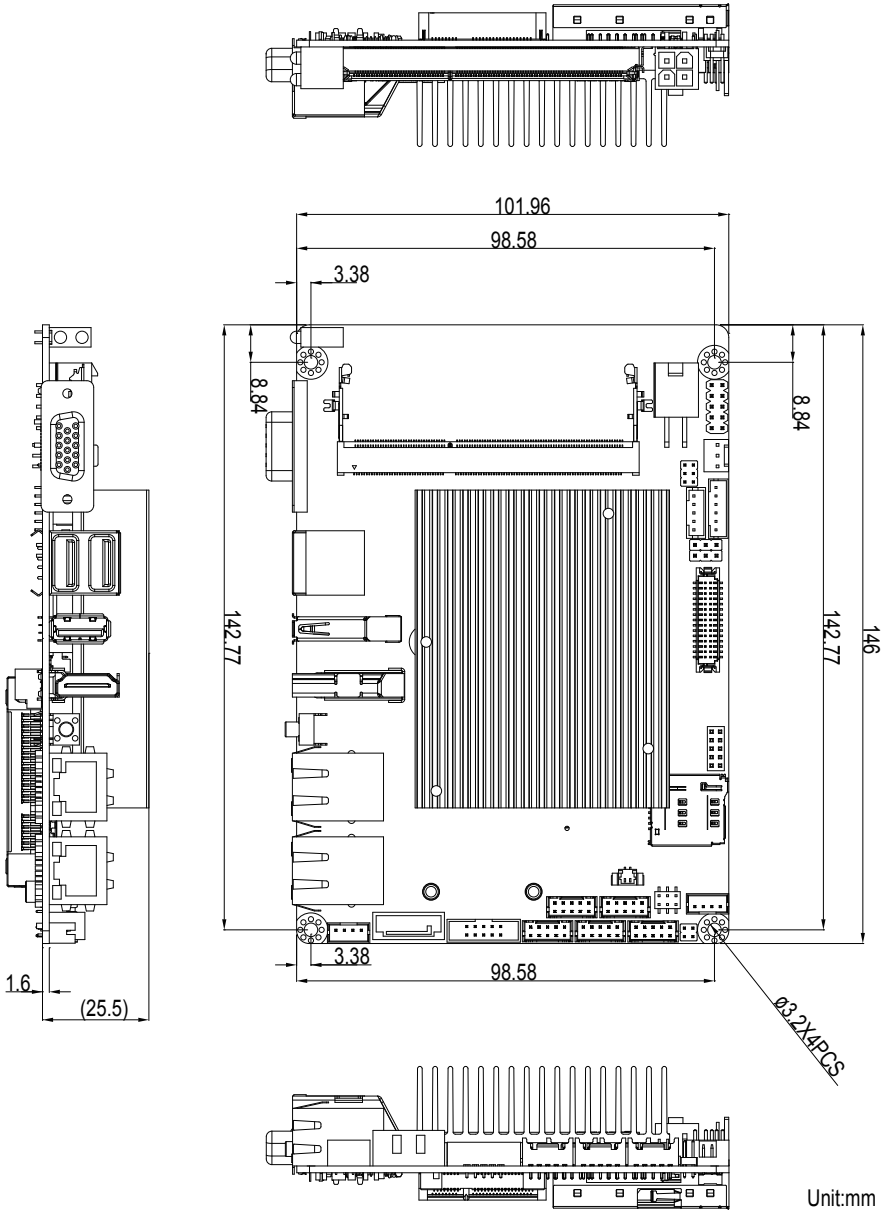
Windows 8.1

Device	Driver Path
Audio	\Audio\32bit_Win7_Win8_Win81_R275
	\Audio\64bit_Win7_Win8_Win81_R275
Chipset	\Chipset\SetupChipset_10.0.13_PC
Ethernet	\Ethernet\Realtek\Win8_8.1\Install_Win8_8.1_8031_05222014
GPIO	\GPIO\Kit 100882 20140211 windows 8.1 64\GPIO(Only for 64-bit)
Graphic	\Graphics\WIN8_32\15.33.22.3621
	\Graphics\WIN8_64\15.33.22.64.3621
TXE	\TXE\Installers
Serial IO	\Serial IO\SerialIO_Installer_Win8.1_64bit_WW23

Board Dimensions (SKU-E3825)



Board Dimensions (SKU-E3845)



Specifications

Form Factor	3.5" Compact Board	
CPU	Soldered onboard Intel® Atom™ Processor E3825 dual-core 1.33GHz or E3845 quad-core 1.91GHz	
System Memory	1 x DDR3L SO-DIMM socket, supporting SDRAM up to 8GB	
Graphics Chipset	Integrated Intel® Gen 7 Graphics	
Graphics Interface	HDMI	Vertical HDMI connector
	LCD	Dual-channel 24-bit LVDS, with resolution up to 1920 x 1200
	Analog RGB that supports resolution up to 2048 x 1536	
Ethernet	2 x Realtek® RTL8111E PCIe GbE controllers	
BIOS	Insyde BIOS	
Audio	Realtek ALC662 HD Audio CODEC, MIC-in/Line-out/Line-in	
Storage	1 x Serial ATA port with 300MB/s HDD transfer rate	
	1 x CFast socket	
	Soldered onboard 4G/8GB/16GB eMMC 4.5 (OEM request)	
Serial Port	2 x COM ports (2 x RS-232/485 port selectable)	
Universal Serial Bus	6 x USB 2.0 ports	
	1 x USB 3.0 port	
Digital I/O	8-bit programmable Digital Input/Ouput	
Expansion Bus	1 x PCI-E Mini-card socket (Full Size)	
	1 x Micro-SDXC socket	
	1 x Micro SIM socket	
Power Requirement	+12V DC	
Power Consumption	0.83A@+12V (E3845)	
Operating Temp.	-20°C ~ 70°C (-4°F ~ 158°F) -40°C ~ 85°C (-40°F ~ 185°F, WT series)	
Operating Humidity	10% ~ 95% @ 70°C (non-condensing) 10% ~ 95% @ 85°C (non-condensing, WT series)	
Watchdog Timer	1~255 levels reset	
Dimension (L x W)	146 x 102 mm (5.7" x 4.0")	

Jumpers & Connectors Quick Reference

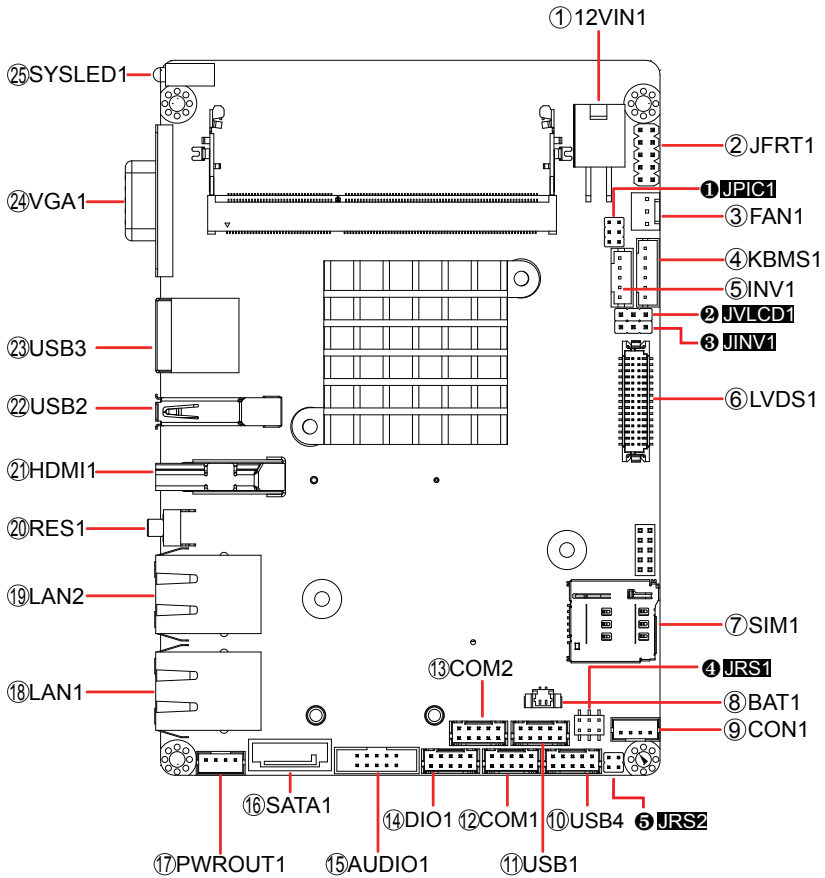
Jumpers

Jumper	Description
JPIC1	AT/ATX Power Mode Selection
JVLCD1	LCD Panel Voltage Selection
JINV1	LCD Inverter Voltage Selection
JRS1	COM1&2 RS-232/485 Mode Selection
JRS2	COM1&2 RS-485 Terminator Mode Selection

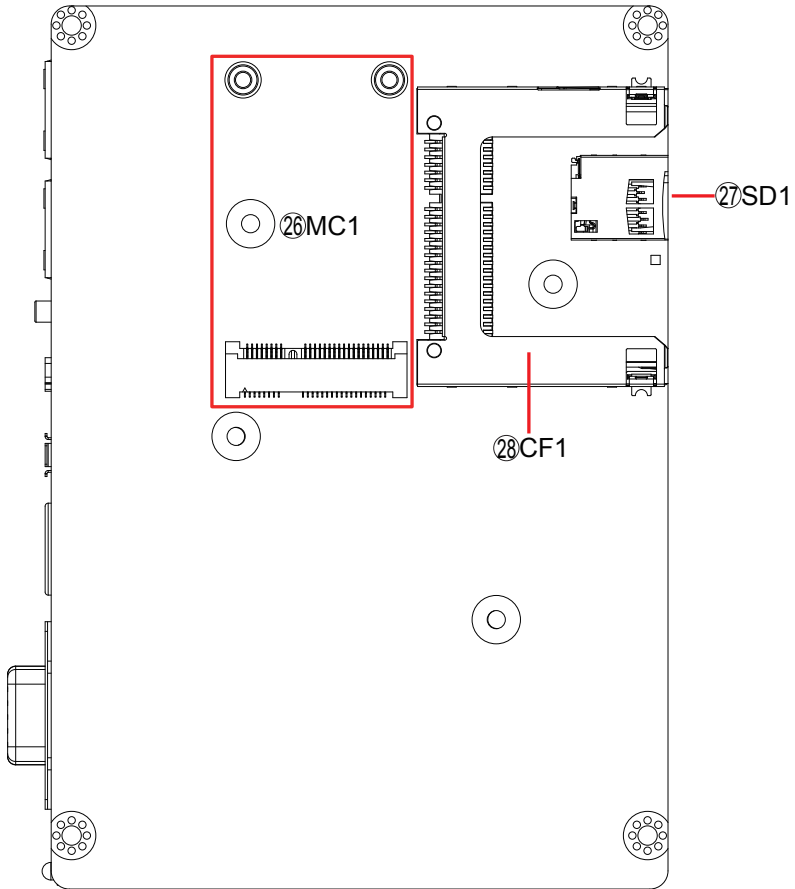
Connectors

Connector	Description
12VIN1	ATX +12V connector
JFRT1	Front-panel switches and LED indicators connector
FAN1	Fan connector
KBMS1	Keyboard & Mouse connector
INV1	LCD inverter connector
LVDS1	LVDS LCD panel connector
SIM1	micro-SIM card socket
BAT1	Battery connector
CON1	RS-485 connector
USB1 ,4	USB 2.0 connectors
COM1&2	Serial port connectors
DIO1	Digital I/O connector
AUDIO1	Audio connector
SATA1	Serial ATA connector
PWROUT1	SATA power connector
LAN1,2	Ethernet connectors
RES1	Reset button
HDMI1	HDMI connector
USB2	USB 3.0 connector
USB3	Double-stacked USB connectors
VGA1	Analog RGB connector
SYSLED1	Power ON & HDD LED indicator
MC1	Mini-card socket (on board bottom)
SD1	microSD card socket (on board bottom)
CF1	CFast card socket (on board bottom)

Jumper & Connector Locations





Board Bottom



Jumpers



① JPIC1: AT/ATX Power Mode Selection

Jumper type: 2.00mm pitch 2x3-pin header

Pin	Description	
2-4	AT	
4-6	ATX (default)	



② JVLCD1: LCD Panel Voltage Selection

Jumper type: 2.54mm pitch 1x3-pin header

Pin	Description	
1-2	+5V	
2-3	+3.3V (default)	





③ JINV1: LCD Inverter Voltage Selection

Jumper type: 2.54mm pitch 1x3-pin header

Pin	Description	
1-2	+12V	
2-3	+5V (default)	





④ JRS1: COM1&2 RS-232/485 Selection

Jumper type: 2.00 mm pitch 2x3-pin header

Pin	Description	
1-3	COM1=RS-232 (default)	
3-5	COM1=RS-485	
2-4	COM2=RS-232 (default)	
4-6	COM2=RS-485	

⑤ JRS2: COM1&2 RS-485 Terminator Mode Selection

Jumper type: 2.00 mm pitch 2x2-pin header

Pin	Status	Description	
1-2	Open	Set COM1 to RS-485 Terminator Mode (default)	
	Short	Set COM1 to RS-485 Normal Mode	
3-4	Open	Set COM2 to RS-485 Terminator Mode (default)	
	Short	Set COM2 to RS-485 Normal Mode	

Connectors

① 12VIN1: ATX +12V Connector

Connector type: 4-pin power connector

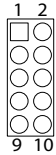
Pin	Description	Pin	Description
4	+12V	3	+12V
2	GND	1	GND



② JFRT1: Front-panel switches and LED indicators connector

Connector type: 2.54mm pitch 2x5-pin header

Pin	Description	Pin	Description
1	RESET+	2	RESET-
3	PWR_LED+	4	PWR_LED-
5	HDD_LED+	6	HDD_LED-
7	SPEAK+	8	SPEAK-
9	PSON+	10	PSON-



③ FAN1: Fan connector

Connector type: 2.54mm pitch 1x3-pin wafer connector.

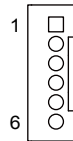
Pin	Description
1	GND
2	+12V
3	Speed



④ KBMS1: Keyboard & Mouse connector

Connector type: 2.00mm pitch 1x6-pin header

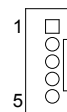
Pin	Description
1	KB_DATA
2	GND
3	MS_DATA
4	KB_CLK
5	PS2_VCC
6	MS_CLK



⑤ INV1: LCD inverter connector

Connector type: 2.00mm pitch 1x5-pin wafer connector

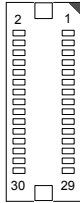
Pin	Description
1	Vin
2	GND
3	on/off
4	Brightness control
5	GND



⑥ LVDS1: LVDS LCD panel connector

Connector type: ACES 1.25mm 87209-3040-06 connector that supports 24-bit dual channels.

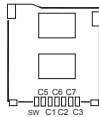
Pin Description	Pin Description
2 VDD	1 VDD
4 TX2_CLK+	3 TX1_CLK+
6 TX2_CLK-	5 TX1_CLK-
8 GND	7 GND
10 TX2_D0+	9 TX1_D0+
12 TX2_D0-	11 TX1_D0-
14 GND	13 GND
16 TX2_D1+	15 TX1_D1+
18 TX2_D1-	17 TX1_D1-
20 GND	19 GND
22 TX2_D2+	21 TX1_D2+
24 TX2_D2-	23 TX1_D2-
26 GND	25 GND
28 TX2_D3+	27 TX1_D3+
30 TX2_D3-	29 TX1_D3-



⑦ SIM1: micro-SIM card socket

Connector type: REGO 80440GIH-061T-120L socket

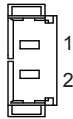
Pin Description	Pin Description
C1 VCC	C2 RST
C3 CLK	C5 GND
C6 VPP	C7 I/O



⑧ BAT1: Battery connector

Connector type: 1.25mm pitch 1x2 pin wafer connector

Pin	Description
1	GND
2	Battery Power



⑨ CON1: RS-485 connector

Connector type: 2.00mm pitch 1x4-pin wafer Connector

Pin	Description
1	COM1 DATA1 +
2	COM1 DATA1 -
3	COM2 DATA2 +
4	COM2 DATA2 -

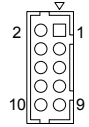


Note: To enable this port, please refer to Jumper Setting: JRS1 on P.10.

⑩⑪ USB1,4: USB 2.0 connectors

Connector type: 2.00mm pitch 2x5-pin lockable box headers

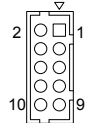
Pin Description	Pin Description
2 +5V	1 +5V
4 USBP1-	3 USBP0-
6 USBP1+	5 USBP0+
8 GND	7 GND
10 GND	9 GND



⑫⑬ COM1&2: Serial port connectors

Connector type: 2.00mm pitch 2x5-pin lockable box headers

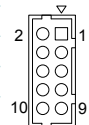
Pin Description	Pin Description
2 RX	1 DCD#
4 DTR#	3 TXD
6 DSR#	5 GND
8 CTS#	7 RTS#
10 N/C	9 RI#



⑭ DIO1: Digital I/O connector

Connector type: 2.00mm pitch 2x5-pin lockable box headers

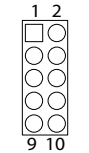
Pin Description	Pin Description
2 GPIO1	1 GPIO0
4 GPIO3	3 GPIO2
6 GPIO5	5 GPIO4
8 GPIO7	7 GPIO6
10 GND	9 +5V



⑮ AUDIO1: Audio connector

Connector type: 2.00mm pitch 2x5-pin box headers

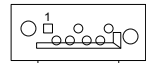
Pin Description	Pin Description
1 Line Left In	2 Line Right In
3 GND	4 GND
5 MIC1	6 MIC2
7 GND	8 GND
9 Line-out Left	10 Line-out Right



⑯ SATA1: Serial ATA connector

Connector type: SATA connector

The pin assignments conform to the industry standard.



⑰ PWROUT1: SATA power connector

Connector type: 2.00mm pitch 1x4-pin wafer connector

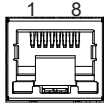
Pin	Description
1	VCC 5V
2	GND
3	GND
4	VCC 12V



⑱ LAN1,2: Ethernet connectors

Connector type: RJ-45 connector that supports 10/100/1000Mbps fast Ethernet

Pin	Description	Pin	Description
1	MDI0+	2	MDI0-
3	MDI1+	4	MDI1-
5	MDI2+	6	MDI2-
7	MDI3+	8	MDI3-

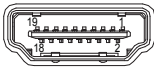


⑳ RES1: Reset Button

㉑ HDMI1: HDMI connector

Connector Type: 19-pin HDMI connector with flange

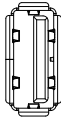
The pin assignments conform to the industry standard.



㉒ USB2: USB 3.0 connector

Connector type: USB 3.0/2.0 type-A connectors

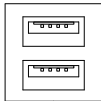
The pin assignments conform to the industry standard.



㉓ USB3: Double-stacked USB connectors

Connector type: Two USB 2.0/1.0 type-A connectors

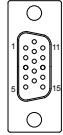
The pin assignments conform to the industry standard.



㉔ VGA1: Analog RGB connector

Connector type: D-Sub 15-pin female connector

Pin	Desc.	Pin	Desc.
1	RED	9	N/C
2	GREEN	10	GND
3	BLUE	11	N/C
4	N/C	12	D-DATA
5	GND	13	H-SYNC
6	GND	14	V-SYNC
7	GND	15	D-DCLK
8	GND		

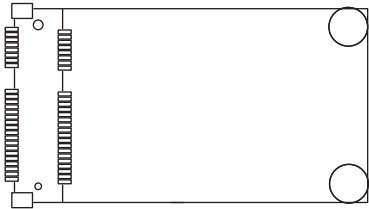


㉕ SYSLED1: Power ON & HDD LED Indicator

㉖ MC1: Mini-card socket

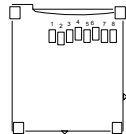
Connector type: Onboard 0.8mm-pitch 52-pin edge card connector

The pin assignments conform to the industry standard.



㉗ SD1: microSD card socket

The pin assignments conform to the industry standard.



㉘ CF1: CFast card socket

The pin assignments conform to the industry standard.

