
PBQ-3000

Qseven Evaluation Carrier Board

Quick Installation Guide

Version 1.3

Form Factor
<i>EPIC Qseven Carrier board</i>

LAN
<i>2 x Gigabit Ethernet ports</i>

Audio
<i>HD AUDIO CODEC Realtek ALC662 , Line-out/ Mic-in</i>

I/O
<i>SATA/ USB/ COM/ LPC/ Mini-Card/ DIO</i>

◆ Technical Support

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

Please do not hesitate to call or e-mail our customer service when you still can not find out the answer.

<http://www.arbor.com.tw>
E-mail: info@arbor.com.tw

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.



Copyright® All Rights Reserved.

404130000130P

Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:



1 x PBQ-3000 Qseven carrier board



1 x Driver CD
1 x Quick Installation Guide

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

Ordering Information

PBQ-3000	Qseven Carrier Board at EPIC form factor
CBK-06-3000-00	Cable Kit 1 x USB cable 1 x USB2 cable 2 x Serial port cables 1 x SATA cable 1 x SATA power cable

Driver Path

Windows XP

LAN	\\EmCORE-i65M3\ETHERNET\WinXP_82583V
AUDIO	\\EmCORE-i65M3\AUDIO\WinXP_ALC662

Windows 7

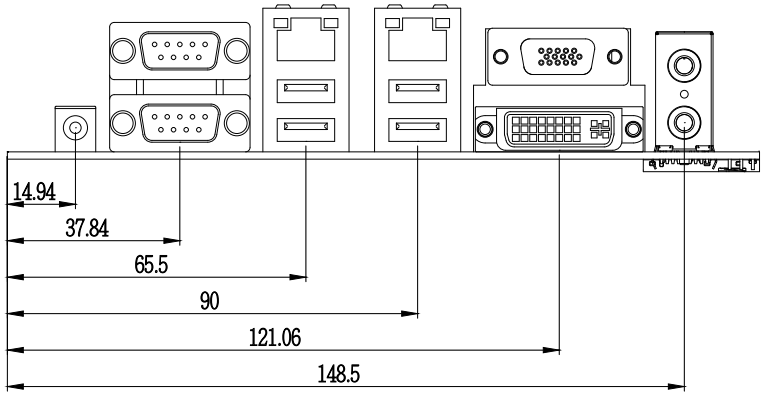
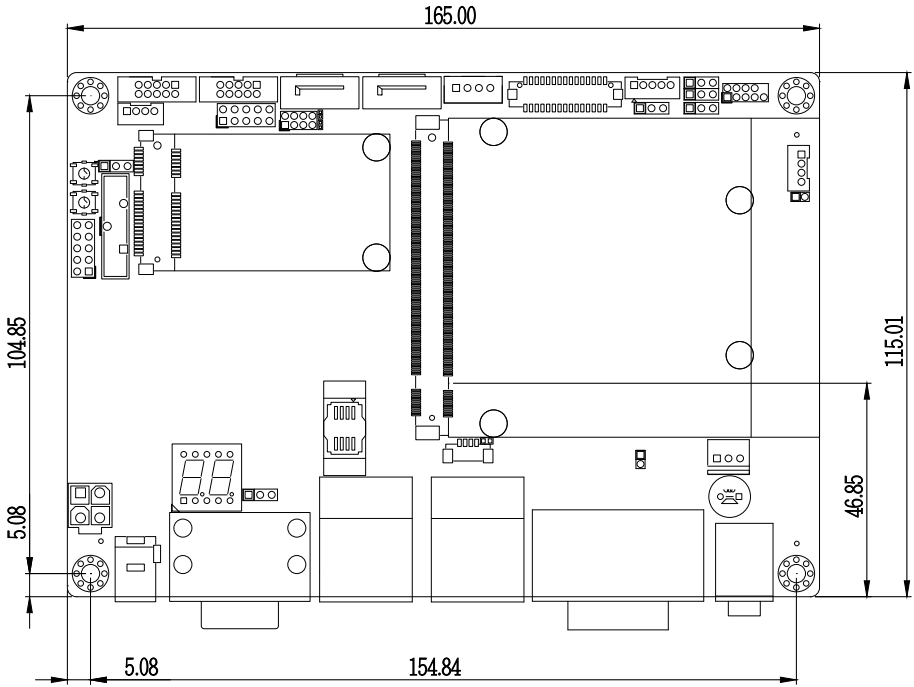
LAN	\\EmCORE-i65M3\ETHERNET\Win7_82583V
AUDIO	\\EmCORE-i65M3\AUDIO\Win7_ALC662

Specifications

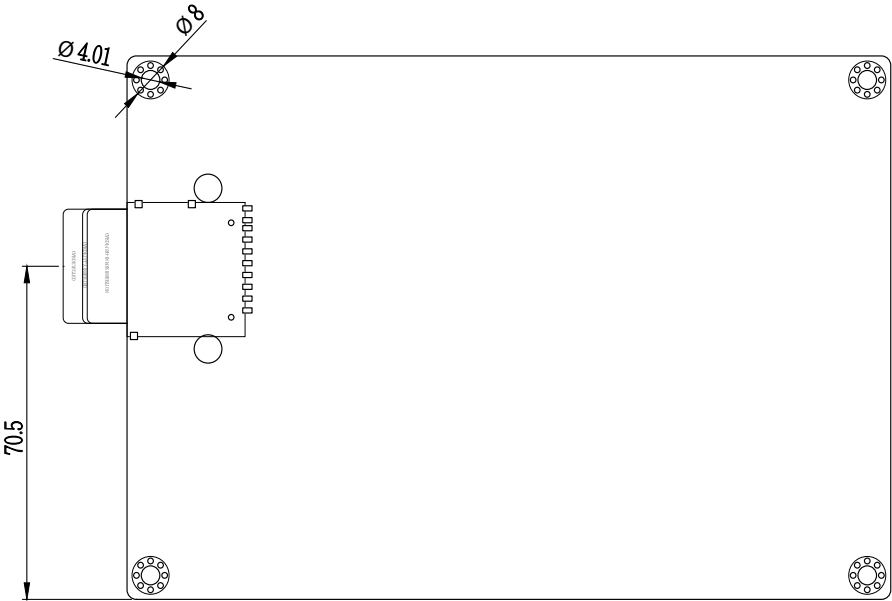
Serial ATA	2 x SATA 300MB/s ports
Ethernet	2 x GbE ports One port comes from CPU module One port with on Carrier board Intel 82583V PCIe GbE controller
USB 2.0	7 x USB 2.0 ports
Serial Port	4 x COM ports (3 x RS-232, 1 x RS-232/422/485 selectable)
Audio	HD Audio Codec Realtek ALC662, Line-out/ MIC-in
Expansion Bus	1 x Mini-Card slot
Power Connector	4-pin power connector
Operation Temp.	-20°C ~ 70°C (-4°F ~ 158°F)
Humidity	0% ~ 95% non-condensing
Dimension (LxW)	165 x 115mm (6.5" x 4.5")

Board Dimensions

Top Side



Bottom Side



Jumpers/ Connectors Quick Reference

Jumpers

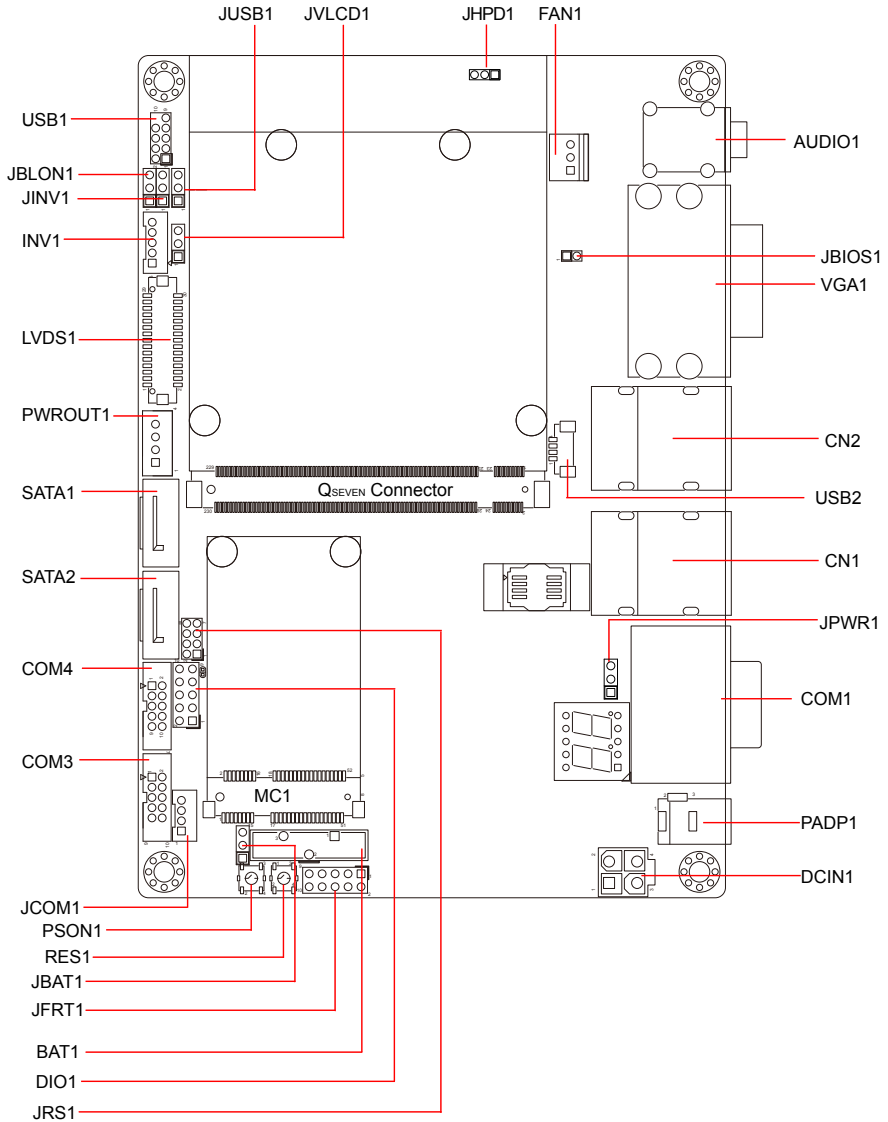
Label	Description
JPWR1	AT/ATX Power Mode Selection
JBAT1	Clear CMOS Setting
PSON1	Power Switch
RES1	Reset Switch
JBIOS1	SPI BIOS Setting
JRS1	JCOM1/COM2 RS-232/422/485 Selection
JVLCD1	LCD Voltage Setting
JINV1	Inverter Voltage Setting
JBLON1	LCD Backlight on Control Mode Selection
JUSB1	USB1 Port Client/ Host Selection
JHPD1	DP Hot Plug Detection

Connectors

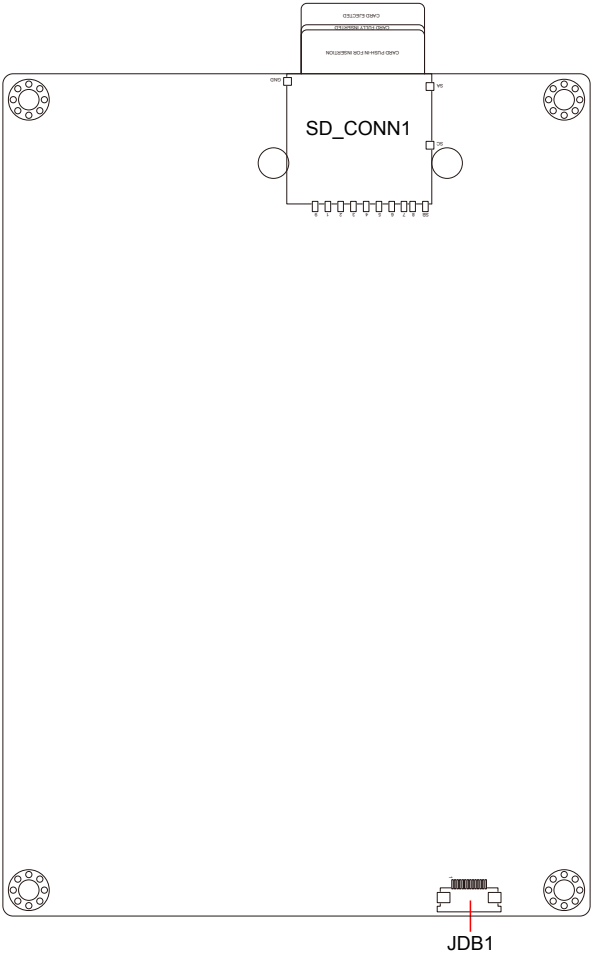
Label	Description
PADP1	
AUDIO1	Audio Connector
COM1	Serial Port Connector
COM3, 4	Serial port Connectors
CN1~2	Ethernet & USB 2,3,4,5 Port Connectors
DCIN1	DC In Power Connector
MXM1	Q-seven Connector
DIO1	Digital I/O Connector
FAN1	Fan Connector
INV1	Inverter Connector
JDB1	Support SCDB-5291 CHARGER Board Connector
JCOM1	RS-422/RS-485 Serial Port
JFRT1	Switches and Indicators
LVDS1	LVDS Connector
MC1	Mini-Card Socket
PWROUT1	SATA HDD Power Connector
SD_CONN1	SD Card
SATA1, 2	Serial ATA Connectors
USB1	USB0, 1 Port Connector
USB2	USB Port 7 Connector
VGA1	Analog RGB & DVI Connector

Jumpers & Connectors location

Top Side





Bottom Side



Jumper



JPWR1: AT/ATX Power Mode Selection

Connector type: 2.54mm pitch 1x3-pin headers.

Pin	Mode	
1-2	AT Mode (Default)	
2-3	ATX Mode	



JBAT1: Clear CMOS Setting

Connector type: 2.00mm pitch 1x3-pin headers.

Pin	Mode	
1-2	Keep CMOS (Default)	
2-3	Clear CMOS	

JBIOS1: SPI BIOS Setting



Connector type: 2.00mm pitch 1x2-pin headers.

Pin	Mode	
Open	Set SPI Flash to CPU module (Default)	
Short	Set SPI Flash to Carrier board	

Note:The voltage of carrier board provided is 3.3V, please choose 3.3V BIOS chipset.

JVLCD1: LCD Voltage Setting

Connector type: 2.54mm pitch 1x3-pin headers.

Pin	Mode	
1-2	+5V	
2-3	+3.3V (Default)	

JINV1: Inverter Voltage Setting

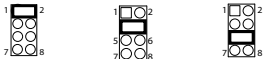
Connector type: 2.00mm pitch 1x3-pin headers.

Pin	Mode	
1-2	+5V	
2-3	+12V (Default)	

JRS1: JCOM1/COM2 RS-232/422/485 Selection

Connector type: 2.00mm pitch 2x4-pin headers.


Mode	RS-232 (Default)	RS-422	RS-485
1-2	Short	Open	Open
3-4	Open	Short	Open
5-6	Open	Open	Short



JRS1: JCOM1/COM2 RS-485 Auto-Flow Selection



Connector type: 2.00mm pitch 2x4-pin headers.

Mode	Enable	Disable
7-8	Short	Open



JBLON1: LCD Backlight on Control Mode Selection



Connector type: 2.54mm pitch 1x3-pin headers.

Pin	Mode	
1-2	Backlight on Low Active	
2-3	Backlight on High Active (Default)	

JUSB1: USB1 port Client/ Host Selection



Connector type: 2.54mm pitch 1x3-pin headers.

Note: Only EmQ-v900 support USB client.

Pin	Mode	
1-2	Set USB1 port as Host (Default)	
2-3	Set USB1 port as Client	

JHPD1: DP hot plug detection

Connector type: 2.00mm pitch 1x3-pin headers.

Pin	Mode	
1-2	Low active (default)	
2-3	High active	

Connectors

JFRT1: Switches and Indicators

It provides connectors for system indicators that provides light indication of the computer activities and switches to change the computer status.

Connector type: 2.54mm pitch 2x5-pin headers.

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



DCIN1: DC IN Power Connector

DCIN1 supplies wide range DC voltage from 10~30V.

Pin	Desc.	Pin	Desc.
1	GND	2	GND
3	V-IN	4	V-IN



PADP1: DC IN Power Connector

PADP1 supplies wide range DC voltage from 10~30V.

Pin	Desc.	Pin	Desc.
1	GND	2	GND
3	V-IN	4	V-IN



Note:Both DCIN1 and PADP1 are power connectors. The default setting is DCIN1. You can only choose either one of them.

FAN1: Fan Connector

FAN1 is a 3-pin headers for the CPU fan. The fan must be a +12V fan.

Pin	Description
1	GND
2	+12V
3	FAN_IN



USB1: USB0, 1 Port Connector

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

Pin Desc.	Pin Desc.
1 +5V	2 +5V (JUSB1 configured)
3 USBD0-	4 USBD1-(JUSB1 configured)
5 USBD0+	6 USBD1+(JUSB1 configured)
7 GND	8 GND
9 GND	10 N/C (Key)



USB2: USB port 7 connector

Connector type: WF125-4/85205-04

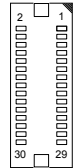
Pin	Description
1	+5V
2	USB3_D-
3	USB3_D+
4	GND



LVDS1: LVDS Connector

Connector type: DF-13-30DP-1.25V connector.

Pin Desc.	Pin Desc.
2 VDD	1 VDD
4 TX2CLK+	3 TX1CLK+
6 TX2CLK-	5 TX1CLK-
8 GND	7 GND
10 TX2D0+	9 TX1D0+
12 TX2D0-	11 TX1D0-
14 GND	13 GND
16 TX2D1+	15 TX1D1+
18 TX2D1-	17 TX1D1-
20 GND	19 GND
22 TX2D2+	21 TX1D2+
24 TX2D2-	23 TX1D2-
26 GND	25 GND
28 TX2D3+	27 TX1D3+
30 TX2D3-	29 TX1D3-



INV1: Inverter Connector

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

Power pin-1 could be configured as +5V/ +12V by JINV1.

Pin	Description
1	+5V/ +12V
2	GND
3	Backlight on/off
4	Brightness control
5	GND



JCOM1: RS-422/485 Serial Port

Connector type: 2.54mm pitch 1x4-pin box wafer connector.

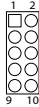
Pin	RS-422	RS-485
1	TX+	DATA+
2	TX-	DATA-
3	RX+	N/C
4	RX-	N/C



DIO1: Digital I/O Connector

Connector type: 2.54 mm pitch 2x5-pin headers

Pin	Desc.	Pin	Desc.
1	DIO1	2	DIO2
3	DIO3	4	DIO4
5	DIO5	6	DIO6
7	DIO7	8	DIO8
9	+5V	10	GND



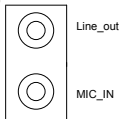
SATA1~2: Serial ATA Connectors

Pin	Description
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND



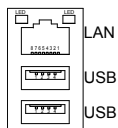
AUDIO1: Audio Connector

The AUDIO1 is composed of Line out and Microphone jacks.



CN1, CN2: Ethernet & USB Port Connectors

Connector type: RJ-45 + double stacks USB type A connector.



PWROUT1: SATA HDD Power Connector

Connector type: WF250-4/B4B-XH-A(LF)(SN)

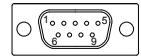
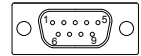
Pin	Description
1	+ 5V
2	GND
3	GND
4	+ 12V



COM1: Serial Port Connector

Connector type: Double Stacked D-Sub 9-pin male.

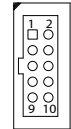
Pin	Desc.	Pin	Desc.
1	DCD#	6	DSR#
2	RXD	7	RTS#
3	TXD	8	CTS#
4	DTR#	9	RI#
5	GND		



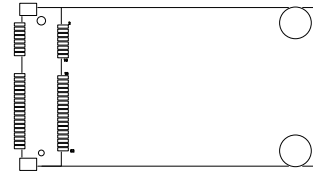
COM3~4: Serial Port Connectors

Connector type: 2.54mm pitch 2x5-pin box headers.

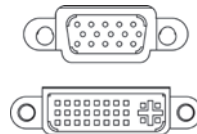
Pin	Desc.	Pin	Desc.
1	DCD#	2	RXD
3	TXD	4	DTR#
5	GND	6	DSR#
7	RTS#	8	CTS#
9	RI#	10	N/C



MC1: Mini-Card Socket



VGA1: Analog RGB & DVI Connector



Q_{SEVEN} Connector Pin Assignments

Pin	Signal	Pin	Signal
1	GND	2	GND
3	GBE_MDI3-	4	GBE_MDI2-
5	GBE_MDI3+	6	GBE_MDI2+
7	GBE_LINK100#	8	GBE_LINK1000#
9	GBE_MDI1-	10	GBE_MDI0-
11	GBE_MDI1+	12	GBE_MDI0+
13	GBE_LINK#	14	GBE_ACT#
15	GBE_CTREF	16	SUS_S5#
17	WAKE#	18	SUS_S3#
19	SUS_STAT#	20	PWRBTN#
21	SLP_BTN# (N/C)	22	LID_BTN#
23	GND	24	GND
	KEY		KEY
25	GND	26	PWGIN
27	BATLOW#	28	RSTBTN#
29	SATA0_TX+	30	SATA1_TX+
31	SATA0_TX-	32	SATA1_TX-
33	SATA_ACT#	34	GND
35	SATA0_RX+	36	SATA1_RX+
37	SATA0_RX-	38	SATA1_RX-
39	GND	40	GND
41	BIOS_DISABLE#	42	SDIO_CLK#
43	SDIO_CD#	44	SDIO_LED (N/C)
45	SDIO_CMD	46	SDIO_WP
47	SDIO_PWR#	48	SDIO_DAT1
49	SDIO_DAT0	50	SDIO_DAT3
51	SDIO_DAT2	52	SDIO_DAT5
53	SDIO_DAT4	54	SDIO_DAT7
55	SDIO_DAT6	56	RSVD
57	GND	58	GND
59	HDA_SYNC	60	SMB_CLK
61	HDA_RST#	62	SMB_DAT
63	HDA_BITCLK	64	SMB_ALERT# (N/C)

Pin	Signal	Pin	Signal
65	HDA_SDI	66	I2C_CLK
67	HDA_SDO	68	I2C_DAT
69	THR#	70	WDTRIG#
71	THRMTRIP#	72	WDOUT (N/C)
73	GND	74	GND
75	USB_P7-	76	USB_P6-
77	USB_P7+	78	USB_P6+
79	USB_6_7_OC#	80	USB_4_5_OC#
81	USB_P5-	82	USB_P4-
83	USB_P5+	84	USB_P4+
85	USB_2_3_OC#	86	USB_0_1_OC#
87	USB_P3-	88	USB_P2-
89	USB_P3+	90	USB_P2+
91	USB_HOST_PRE#	92	USB_HC_SEL (N/C)
93	USB_P1-	94	USB_P0-
95	USB_P1+	96	USB_P0+
97	GND	98	GND
99	LVDS_A0+	100	LVDS_B0+ (N/C)
101	LVDS_A0-	102	LVDS_B0- (N/C)
103	LVDS_A1+	104	LVDS_B1+ (N/C)
105	LVDS_A1-	106	LVDS_B1- (N/C)
107	LVDS_A2+	108	LVDS_B2+ (N/C)
109	LVDS_A2-	110	LVDS_B2- (N/C)
111	LVDS_PPEN	112	LVDS_BPEN
113	LVDS_A3+	114	LVDS_B3+ (N/C)
115	LVDS_A3-	116	LVDS_B3- (N/C)
117	GND	118	GND
119	LVDS_A_CLK+	120	LVDS_B_CLK+ (N/C)
121	LVDS_A_CLK-	122	LVDS_B_CLK- (N/C)
123	LVDS_BLT_CTRL	124	RSVD
125	LVDS_DID_DAT	126	LVDS_BLC_DAT (N/C)
127	LVDS_DID_CLK	128	LVDS_BLC_CLK (N/C)
129	RSVD	130	RSVD

Pin	Signal	Pin	Signal
131	SDVO_BCLK+	132	SDVO_INT+ (N/C)
133	SDVO_BCLK-	134	SDVO_INT- (N/C)
135	GND	136	GND
137	SDVO_GREEN+	138	SDVO_FLDSTALL+
139	SDVO_GREEN-	140	SDVO_FLDSTALL-
141	GND	142	GND
143	SDVO_BLUE+	144	SDVO_TVCLKIN+ (N/C)
145	SDVO_BLUE-	146	SDVO_TVCLKIN- (N/C)
147	GND	148	GND
149	SDVO_RED+	150	SDVO_CTRL_DAT (N/C)
151	SDVO_RED-	152	SDVO_CTRL_CLK (N/C)
153	HDMI_HPD# (N/C)	154	DP_HPD#
155	PCIE_CLK_REF+	156	PCIE_WAKE#
157	PCIE_CLK_REF-	158	PCIE_RST#
159	GND	160	GND
161	PCIE3_TX+ (N/C)	162	PCIE3_RX+ (N/C)
163	PCIE3_TX- (N/C)	164	PCIE3_RX- (N/C)
165	GND	166	GND
167	PCIE2_TX+ (N/C)	168	PCIE2_RX+ (N/C)
169	PCIE2_TX- (N/C)	170	PCIE2_RX- (N/C)
171	EXCD0_PERST#	172	EXCD1_PERST#
173	PCIE1_TX+	174	PCIE1_RX+
175	PCIE1_TX-	176	PCIE1_RX-
177	EXCD0_CPPE# (N/C)	178	EXCD1_CPPE# (N/C)
179	PCIE0_TX+	180	PCIE0_RX+
181	PCIE0_TX-	182	PCIE0_RX-
183	GND	184	GND
185	LPC_AD0	186	LPC_AD1
187	LPC_AD2	188	LPC_AD3
189	LPC_CLK	190	LPC_FRAME#
191	SERIRQ	192	LPC_LDRQ#
193	VCC_RTC	194	SPKR
195	FAN_TACHOIN (N/C)	196	FAN_PWMOUT (N/C)

Pin	Signal	Pin	Signal
197	GND	198	GND
199	RSVD	200	SPI_CS0#
201	RSVD	202	RSVD
203	RSVD	204	CRT_RED
205	VCC_5V_SB	206	VCC_5V_SB
207	CRT_VSYNC	208	CRT_GREEN
209	CRT_HSYNC	210	CRT_BLUE
211	VCC	212	VCC
213	VCC	214	VCC
215	VCC	216	VCC
217	VCC	218	VCC
219	VCC	220	VCC
221	VCC	222	VCC
223	VCC	224	VCC
225	VCC	226	VCC
227	VCC	228	VCC
229	VCC	230	VCC

Note:

The Qseven Standard reserved pins 204, 207, 208, 209, 210 are defined by Arbor's proprietary definition for VGA function. Also these signals are provided by Arbor's Qseven modules. There is no VGA function provided in case of the use of other vendors' CPU module.

This page is intentionally left blank.