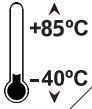


**Wide Operating  
Temperature**



# EmQ-i230J

## Wide Range Temperature Qseven® CPU Module

### Quick Installation Guide

Version 1.0

<b>Form Factor</b> <i>Qseven® CPU Module</i>	<b>CPU</b> <i>Intel® Atom™ Processor E3825/E3845</i>	<b>Video</b> <i>Dual-Channel 24-bit LVDS/ Display port/ Analog RGB to GF (Reserved-pin)</i>
<b>LAN</b> <i>Intel® i210IT PCIe GbE controller</i>	<b>Audio</b> <i>HD Audio Link</i>	<b>I/O</b> <i>USB/ SATA/ PCIe1/ I2C</i>

### ◆ Technical Support

If you have any technical difficulties, please contact us via website or e-mail our customer service:

<https://www.arbor-technology.com>

E-mail: [info@arbor.com.tw](mailto:info@arbor.com.tw)

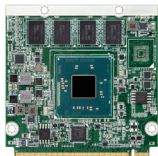
### Declaration of Conformity

FCC Class B

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.

## Packing List

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



1 x EmQ-i230J Qseven® CPU Module



1 x Quick Installation Guide

## Ordering Information

EmQ-i230J-WT-E3825-4G	Intel® Atom™ Processor E3825 WT Qseven® CPU module with 4GB memory soldered on module
EmQ-i230J-WT-E3845-4G	Intel® Atom™ Processor E3845 WT Qseven® CPU module with 4GB memory soldered on module
EmQ-i230J-WT-E3825-2G	Intel® Atom™ Processor E3825 WT Qseven® CPU module with 2GB memory soldered on module
EmQ-i230J-WT-E3845-2G	Intel® Atom™ Processor E3845 WT Qseven® CPU module with 2GB memory soldered on module
EmQ-i230JD-WT-E3825-4G (OEM Request)	Intel® Atom™ Processor E3825 WT Qseven® CPU module with 4GB memory soldered on module,w/ 32GB eMMC
EmQ-i230JD-WT-E3845-4G (OEM Request)	Intel® Atom™ Processor E3845 WT Qseven® CPU module with 4GB memory soldered on module,w/ 32GB eMMC
EmQ-i230JD-WT-E3825-2G (OEM Request)	Intel® Atom™ Processor E3825 WT Qseven® CPU module with 4GB memory soldered on module,w/ 32GB eMMC
EmQ-i230JD-WT-E3845-2G (OEM Request)	Intel® Atom™ Processor E3845 WT Qseven® CPU module with 4GB memory soldered on module,w/ 32GB eMMC

## Optional Accessories

HS-230J-F1	Heat spreader 70x65x8mm
HS-0000-W3	Universal evaluation heat sink kit with thermal pad 70*65*29.8mm, only used on a flat-type heat spreader
PBQ-3000	Qseven® R1.2 carrier board in 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

## Specifications

Form Factor	Qseven® CPU Module
Processor	Soldered onboard Intel® Atom™ Processor E3800 family E3825 1.33GHz or E3845 1.91GHz
Memory	Soldered onboard 2GB/4GB DDR3L SDRAM
BIOS	Insyde BIOS
Watchdog	1~255 levels reset
USB	8 x USB 2.0 ports
Expansion	3 x PCIe x1 lanes, I2C, SDIO
Storage	2 x Serial ATA ports with 300MB/s HDD transfer rate up to 64GB eMMC 4.5 (OEM Request)
Ethernet	1 x Intel® i210IT PCIe GbE controller
Audio	HD Audio Link
Graphics Interface	LCD: Dual Channels 24-bit LVDS, resolution up to 1920x1200
	Analog RGB signals (via Qseven® GF reserved pin)
	1 x DDI port
Power Requirement	DC 5V, 5VSB
Power Consumption	0.93A@12V with E3825 (Typical, with PBQ-3000)
Operating Temp.	-40°C ~ 85°C (-40°F ~ 185°F)
Operating Humidity	10 ~ 95%@85°C(non-condensing)
Dimension (L x W)	70 x 70 mm (2.76" x 2.76")

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## Drivers (7.1A) Installation

To install the drivers, please visit our website at [www.arbor-technology.com](http://www.arbor-technology.com) and download the driver pack from the product page.

### Windows 7

Driver	Path
Audio	\EmQ-i230J\Win7\Audio\32bit_Win7_R273
	\EmQ-i230J\Win7\Audio\64bit_Win7_R273
Chipset	\EmQ-i230J\Win7\Chipset
Ethernet	\EmQ-i230J\Win7\LAN\PROWin32
	\EmQ-i230J\Win7\LAN\PROWinx64
Graphics	\EmQ-i230J\Win7\Graphic\32bit
	\EmQ-i230J\Win7\Graphic\64bit
Processor IO	\EmQ-i230J\Win7\Processor IO\Win7_IO_Drivers
TXE Patch	\EmQ-i230J\Win7\TXE Patch

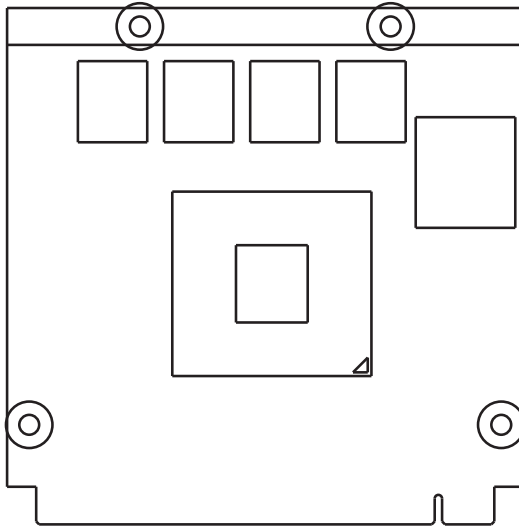
### Windows 10

Driver	Path
Audio	\EmQ-i230J\Win10\Audio\Win32
	\EmQ-i230J\Win10\Audio\Win64
GPIO I2C	\EmQ-i230J\Win10\GPIO I2C\windows10_32_64
Ethernet	\EmQ-i230J\Win10\LAN\Win32_64
Graphics	\EmQ-i230J\Win10\Graphic\Win32\win10_36_15_0_1091
	\EmQ-i230J\Win10\Graphic\Win64\win10_37_15_0_1091
INF	\EmQ-i230J\Win10\INF\Win32_64
TXE Patch	\EmQ-i230J\Win10\TXE

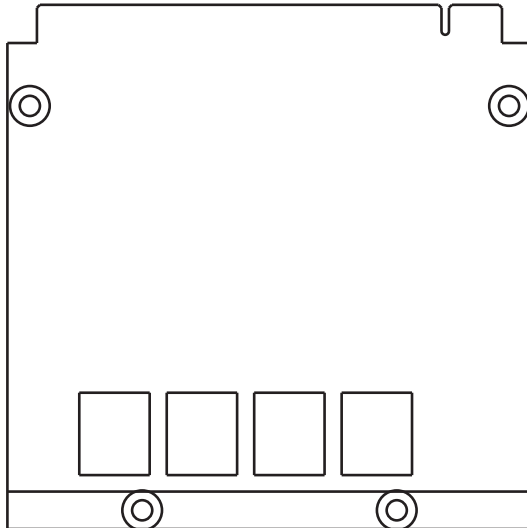
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## Connectors Quick Reference

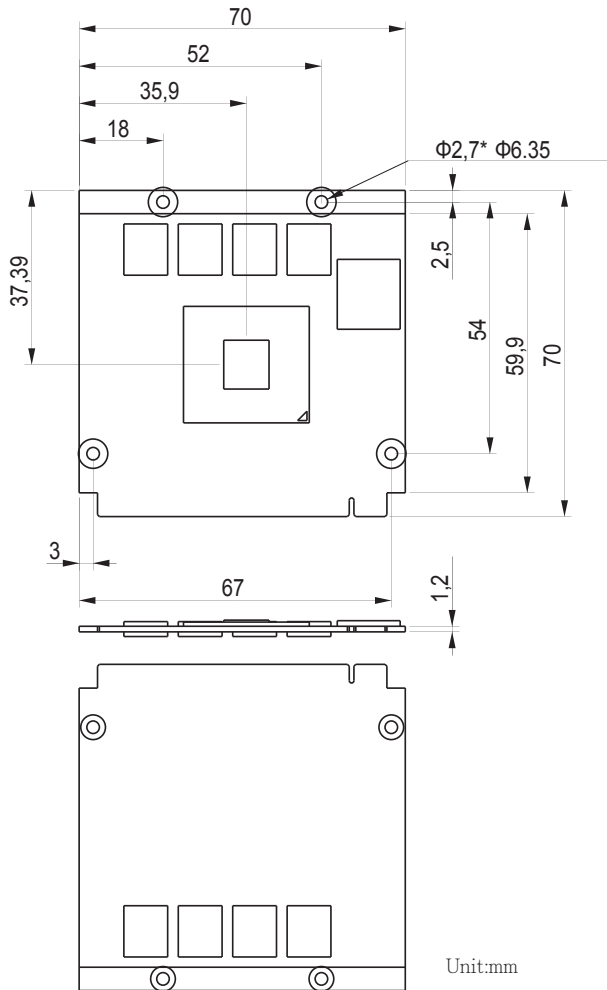
### Top View



### Bottom View



# Board Dimensions



# Connector Pin Assignment

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	2	GND	65	SDATA_IN0	66	I2C_CLK
3	GBE_MDI3-	4	GBE_MDI2-	67	SDATA_OUT	68	I2C_DAT
5	GBE_MDI3+	6	GBE_MDI2+	69	THRM#	70	WDTRIG#
7	GBE_LINK100#	8	GBE_LINK1000#	71	THRM_ALERT#	72	WDOUT (N/C)
9	GBE_MDI1-	10	GBE_MDI0-	73	GND	74	GND
11	GBE_MDI1+	12	GBE_MDI0+	75	USB_P7-	76	USB_P6-
13	GBE_LINK#	14	GBE_ACT#	77	USB_P7+	78	USB_P6+
15	GBE_V1P5	16	SUS_S4#	79	OVCUR#_C2	80	OVCUR#_C1
17	WAKE#	18	SUS_S3#	81	USB_P5-	82	USB_P4-
19	SUS_STAT#	20	PWRBTN#	83	USB_P5+	84	USB_P4+
21	SLEEP#	22	LID#	85	USB_OC2/3	86	USB_OC0/1
23	GND	24	GND	87	USB_P3-	88	USB_2P
	KEY		KEY	89	USB_P3+	90	USB_2N
25	GND	26	PWRGD	91	USB_HOST_PRES#(N/C)	92	USB_HC_SEL (N/C)
27	BATLOW#	28	RSTBTN#	93	USB_P1-	94	USB_0N
29	SATA0_TX+	30	SATA1_TX+	95	USB_P1+	96	USB_0P
31	SATA0_TX-	32	SATA1_TX-	97	GND	98	GND
33	SATA_ACT#	34	GND	99	LVDS_A0+	100	LVDS_B0+
35	SATA0_RX+	36	SATA1_RX+	101	LVDS_A0-	102	LVDS_B0-
37	SATA0_RX-	38	SATA1_RX-	103	LVDS_A1+	104	LVDS_B1+
39	GND	40	GND	105	LVDS_A1-	106	LVDS_B1-
41	BIOS_DISABLE#	42	SDIO_CLK#	107	LVDS_A2+	108	LVDS_B2+
43	SDIO_CD#	44	SDIO_LED (N/C)	109	LVDS_A2-	110	LVDS_B2-
45	SDIO_CMD	46	SDIO_WP	111	LCD_VDDEN	112	LVDS_BKLTEN
47	SDIO_PWR#	48	SDIO_DAT1	113	LVDS_A3+	114	LVDS_B3+
49	SDIO_DAT0	50	SDIO_DAT3	115	LVDS_A3-	116	LVDS_B3-
51	SDIO_DAT2	52	SDIO_DAT5 (N/C)	117	GND	118	GND
53	SDIO_DAT4 (N/C)	54	SDIO_DAT7 (N/C)	119	LVDS_A_CLK+	120	LVDS_B_CLK+
55	SDIO_DAT6 (N/C)	56	RSVD (N/C)	121	LVDS_A_CLK-	122	LVDS_B_CLK-
57	GND	58	GND	123	LVDS_BLT_CTRL	124	RSVD (N/C)
59	HDA_SYNC	60	SMB_CLK	125	LVDS_DID_DAT	126	CRT_DDC_DATA
61	HDA_RST#	62	SMB_DAT	127	LVDS_DID_CLK	128	CRT_DDC_CLK
63	HDA_BIT_CLK	64	SMB_ALERT#	129	CAN0_TX (N/C)	130	CAN0_RX (N/C)

Pin	Signal	Pin	Signal
131	DP1_TX3_P	132	SDVO_INT+ (N/C)
133	DP1_TX3_N	134	SDVO_INT- (N/C)
135	GND	136	GND
137	DP1_TX1_P	138	DPIO_AUXP
139	DP1_TX1_N	140	DPIO_AUXN
141	GND	142	GND
143	DP1_TX2_P	144	SDVO_TVCLKIN+ (N/C)
145	DP1_TX2_N	146	SDVO_TVCLKIN- (N/C)
147	GND	148	GND
149	DP1_TX0_P	150	DDIO_DDCDATA
151	DP1_TX0_N	152	DDIO_DDCCLK
153	DDIO_HPDET#	154	DP_HPD#
155	PCIE_CLKP0	156	PCIE_WAKE#
157	PCIE_CLKN0	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+	168	PCIE2_RX+
169	PCIE2_TX-	170	PCIE2_RX-
171	EXCD0_PERST#	172	EXCD1_PERST#
173	PCIE1_TX+	174	PCIE1_RX+
175	PCIE1_TX-	176	PCIE1_RX-
177	EXCD0_CPPE#	178	EXCD1_CPPE#
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_CLK0	190	LPC_FRAME#
191	SERIRQ	192	LPC_LDRQ# (N/C)
193	VCC_RTC	194	SPKR
195	FAN_TACHOIN (N/C)	196	FAN_PWMOUT

Pin	Signal	Pin	Signal
197	GND	198	GND
199	SPI_MOSI	200	SPI_CS0#
201	SPI_MISO	202	SPI_CS1# (N/C)
203	SPI_SCLK	204	CRT_RED
205	VCC_5V_SB	206	VCC_5V_SB
207	CRT_VSYNC	208	CRT_GREEN
209	CRT_HSYNC	210	CRT_BLUE
211	+5V	212	+5V
213	+5V	214	+5V
215	+5V	216	+5V
217	+5V	218	+5V
219	+5V	220	+5V
221	+5V	222	+5V
223	+5V	224	+5V
225	+5V	226	+5V
227	+5V	228	+5V
229	+5V	230	+5V