EmQ-i2401

Qseven® R2.0 CPU Module

Quick Installation Guide

Version 1.2

Form Factor	CPU	Video
Qseven® CPU Module	***Intel® Celeron® N3350/ Pentium® N4200 Processor***	***Dual-Channel 24-bit LVDS/ DDI***

LAN	Audio	I/O
Intel® i210IT PCIe GbE controller	***HD Link***	***USB2.0/ USB SuperSpeed/ SATA/ PCIex1/ SDIO/ I2C***

♦ Technical Support

If you have any technical difficulties, please consult the user's manual first at:

http://www.arbor-technology.com

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

http://www.arbor-technology.com

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 EmQ-i2401 Qseven® CPU Module

1 x Quick Installation Guide

Ordering Information

EmQ-i2401-N4200	Intel® Pentium® N4200 Qseven R2.0 CPU module w/ 4G memory soldered on module, -20~85°C
EmQ-i2401-N3350	Intel® Celeron® N3350 Qseven R2.0 CPU module w/ 4G memory soldered on module, -20~85°C
EmQ-i2401-WT-E3950	Intel® Atom® x7-E3950 Qseven R2.0 CPU module w/ 4G memory soldered on module, -40~85°C
EmQ-i2401-WT-E3940	Intel® Atom® x5-E3940 Qseven R2.0 CPU module w/ 4G memory soldered on module, -40~85°C
EmQ-i2401-WT-E3930	Intel® Atom® x5-E3930 Qseven R2.0 CPU module w/ 4G memory soldered on module, -40~85°C

Optional Accessories

PBQ-900L	Qseven R2.0 w/ EPIC form factor Carrier Board
HS-2401-F1	Heat Spreader, W/PAD, 70*65*8mm for N-Series
HS-2401-F2	Heat Spreader, W/PAD, 70*65*8mm for E-Series
CBK-06-900L-00	Cable kit: 2 x COM cables 1 x USB cable 1 x SATA cable 1 x SATA Power cable 1 x Audio cable

Specifications

Form Factor	Qseven® CPU Module
CPU	Soldered onboard Intel Celeron® N3350 2.4GHz processor/ Intel Pentium® N4200 2.5GHz processor
System Memory	Soldered onboard 4GB DDR3L SDRAM, upgradable to 8GB
BIOS	AMI BIOS, UEFI Code
USB	4 x USB 2.0 ports 2 x USB 3.0 SuperSpeed ports
Expansion Bus	4 x PCIex1 lanes, I²C Interface, SDIO
Storage	2 x Serial ATA ports Soldered onboard eMMC 5.0 16GB/32GB (OEM Request)
Ethernet controller	1 x Intel® i210IT PCIe GbE controller
Audio	HD link
Graphics Chipset	Intergrated in Intel® Gen9 graphic
Graphics Interface	Dual Channel 24-bit LVDS, with resolution up to 1920x1200
	1 x DDI port
OS Support	Windows 10 64-bit Linux: Ubuntu
Power Requirement	DC 5V, 5VSB
Power Consumption	2A@5V with N4200 (Typical with PBQ-900L)
Operating Temp.	-20ºC ~ 85ºC(-4~185ºF) -20ºC ~ 70ºC for EmQ-i2401D series -40ºC ~ 85ºC(-40~185ºF) for EmQ-i2401-WT series
Operating Humidity	10 ~ 95% @ 85°C (non-condensing)
Dimension (L x W)	70 x 70 mm (2.76” x 2.76”)

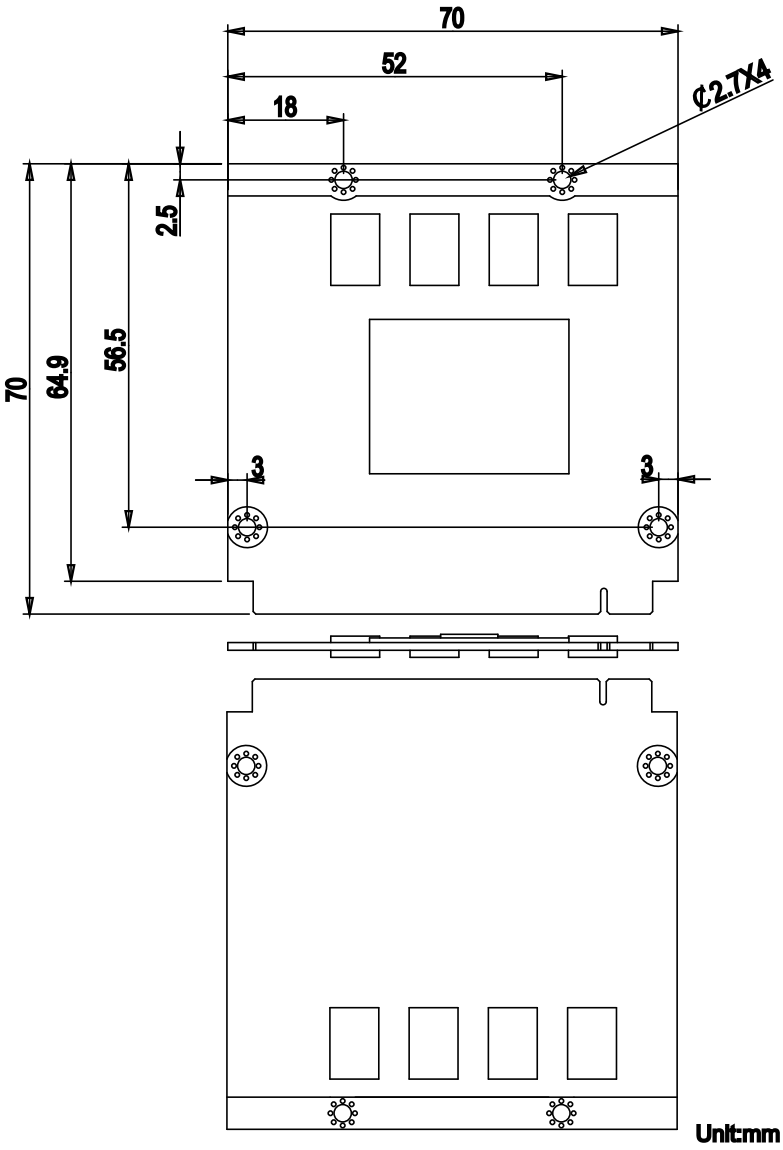
Driver Installation Note

The CPU module supports Windows 10. To install the drivers, please visit our website at **www.arbor-technology.com** and download the driver pack from the product page. If you need driver DVD, please contact your ARBOR sales representative.

Windows 10 (64-bit)

Driver	Path
Audio	\Apollolake-i240x\Audio\7687_PG436_Win10_Win8.1_Win8_Win7_WHQLx64
Chipset	\Apollolake-i240x\Chipset
Ethernet	\Apollolake-i240x\LAN
Graphics	\Apollolake-i240x\Graphic
Serial IO	\Apollolake-i240x\Serial IO\SerialIO_30.100.1620.02_APL_PV_Win10\x64
TXE	\Apollolake-i240x\TXE

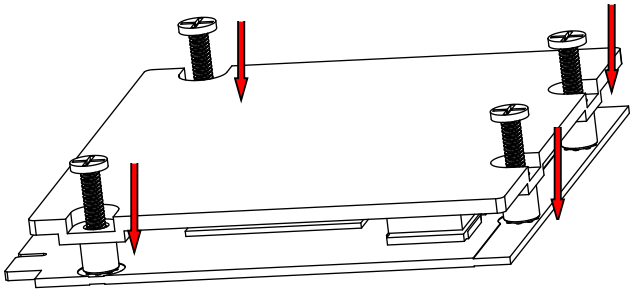
Board Dimensions



Heat Spreader Installation

To install the heat spreader:

See the illustration below. Mount the heat spreader to the board. Fix the heat spreader in place with fours screws.



Connector Pin Assignment

Pin	Signal	Pin	Signal
1	GND	2	GND
3	LAN1_MDI3-	4	LAN1_MDI2-
5	LAN1_MDI3+	6	LAN1_MDI2+
7	LAN_LINK100#	8	LAN_LINK_1000#
9	LAN1_MDI1-	10	LAN1_MDI0-
11	LAN1_MDI1+	12	LAN1_MDI0+
13	LED_LINK#	14	LAN_ACT#
15	GBE_CTREF (N/C)	16	SLP_S4#
17	WAKE#	18	SLP_S3#
19	SUS_STAT#	20	Q7_PWR_BTN#
21	SLEEP#	22	LID#
23	GND	24	GND
	KEY		KEY
25	GND	26	CB_PWRGD
27	Q7_BATLOW#	28	Q7_RSTBTN#
29	SATA_TXP0_C	30	SATA_TXP1_C
31	SATA_TXN0_C	32	SATA_TXN1_C
33	Q7_HDD_ACT#	34	GND
35	SATA_RXP0_C	36	SATA_RXP1_C
37	SATA_RXN0_C	38	SATA_RXN1_C
39	GND	40	GND
41	BIOS_DISABLE#	42	SD_CLK#
43	SD_CD#	44	SDIO_LED (N/C)
45	SD_CMD	46	SD_WP
47	SD_PWR#	48	SD_DATA1
49	SD_DATA0	50	SD_DATA3
51	SD_DATA2	52	SDIO_DAT5 (N/C)
53	SDIO_DAT4 (N/C)	54	SDIO_DAT7 (N/C)
55	SDIO_DAT6 (N/C)	56	RSVD (N/C)
57	GND	58	GND
59	Q7_AZ_SYNC	60	SMB_CLK_RESUME
61	Q7_AZ_RST#	62	SMB_DATA_RESUME
63	Q7_AZ_BIT_CLK	64	Q7_SMB_ALERT#

Pin	Signal	Pin	Signal
65	Q7_AZ_SDATA_IN	66	I2C_CLK0
67	Q7_AZ_SDATA_OUT	68	I2C_DATA0
69	THRM#	70	WDTRIG#
71	THRMTRIP#	72	WDOUT(N/C)
73	GND	74	GND
75	USB3TXN0	76	USB3_RXN0
77	USB3TXP0	78	USB3_RXP0
79	USB_6_7_OC# (N/C)	80	USB_4_5_OC#(N/C)
81	USB3TXN1	82	USB3_RXN1
83	USB3TXP1	84	USB3_RXP1
85	USB_OC2/3	86	USB_OC0/1
87	USB_3N	88	USB_2N
89	USB_3P	90	USB_2P
91	USB_CC (N/C)	92	Q-7_USB_ID(N/C)
93	USB_1N	94	USB_0N
95	USB_1P	96	USB_0P
97	GND	98	GND
99	LVDS_A0+	100	LVDS_B0+
101	LVDS_A0-	102	LVDS_B0-
103	LVDS_A1+	104	LVDS_B1+
105	LVDS_A1-	106	LVDS_B1-
107	LVDS_A2+	108	LVDS_B2+
109	LVDS_A2-	110	LVDS_B2-
111	Q7_VDDEN	112	Q7_BKLTEN
113	LVDS_A3+	114	LVDS_B3+
115	LVDS_A3-	116	LVDS_B3-
117	GND	118	GND
119	LVDS_A_CLK+	120	LVDS_B_CLK+
121	LVDS_A_CLK-	122	LVDS_B_CLK-
123	Q7_LCD_BKLT_CTRL	124	GP_1-Wire_Bus (N/C)
125	LVDS_I2C_DAT	126	eDP0_HPD#/LVDS_BLC_DAT (N/C)
127	LVDS_I2C_CLK	128	eDP1_HPD#/LVDS_BLC_CLK (N/C)
129	CAN0_TX (N/C)	130	CAN0_RX (N/C)

Pin	Signal	Pin	Signal
131	Q7_DDI0_TXP3	132	RSVD (N/C)
133	Q7_DDI0_TXN3	134	RSVD (N/C)
135	GND	136	GND
137	Q7_DDI0_TXP1	138	DDI0_AUXP
139	Q7_DDI0_TXN1	140	DDI0_AUXN
141	GND	142	GND
143	Q7_DDI0_TXP2	144	RSVD (N/C)
145	Q7_DDI0_TXN2	146	RSVD (N/C)
147	GND	148	GND
149	Q7_DDI0_TXP0	150	DDI0_DDI0_DDC-DATA
151	Q7_DDI0_TXN0	152	DDI0_DDC_DDCCLK
153	Q7_DDI0_HPDET#_R	154	DP_HDP#_RSV
155	Q7_PCIE_CLKP1	156	PCIE_WAKE#
157	Q7_PCIE_CLKN1	158	PLTRST#_BUFF
159	GND	160	GND
161	Q7_PCIE_TXP3	162	PCIE_RXP3
163	Q7_PCIE_TXN3	164	PCIE_RXN3
165	GND	166	GND
167	Q7_PCIE_TXP2	168	PCIE_RXP2
169	Q7_PCIE_TXN2	170	PCIE_RXN2
171	Q7_UART1_TXD	172	Q7_UART1_RTS
173	Q7_PCIE_TXP1	174	PCIE_RXP1
175	Q7_PCIE_TXN1	176	PCIE_RXN1
177	Q7_UART1_RXD	178	Q7_UART1_CTS#
179	Q7_PCIE_TXP0	180	PCIE_RXP0
181	Q7_PCIE_TXN0	182	PCIE_RXN0
183	GND	184	GND
185	LPC_LAD0	186	LPC_LAD1
187	LPC_LAD2	188	LPC_LAD3
189	LPC_CLK1	190	LPC_LFRAME#
191	LPC_SERIRQ	192	LPC_LDRQ#
193	VCC_RTC	194	Q7_SPKR
195	FAN_TACHOIN (N/C)	196	FAN_PWMOUT

Pin	Signal	Pin	Signal
197	GND	198	GND
199	Q7_SPI_MOSI	200	Q7_SPI_CS#0
201	Q7_SPI_MISO	202	Q7_SPI_CS#1
203	Q7_SPI_CLK	204	MFG_NC4 (N/C)
205	VCC_5V_SB	206	VCC_5V_SB
207	MFG_NC0 (N/C)	208	MFG_NC2 (N/C)
209	MFG_NC1 (N/C)	210	MFG_NC3 (N/C)
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