

EmQ-i2401

Qseven® R2.0 CPU Module

Quick Installation Guide

Version 1.2

Form Factor
<i>Qseven® CPU Module</i>

CPU
<i>Intel® Celeron® N3350/ Pentium® N4200 Processor</i>

Video
<i>Dual-Channel 24-bit LVDS/ DDI</i>

LAN
<i>Intel® i210IT PCIe GbE controller</i>

Audio
<i>HD Link</i>

I/O
<i>USB2.0/ USB SuperSpeed/ SATA/ PClex1/ SDIO/ I2C</i>

◆ 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-i2401D-N4200	Intel® Pentium® N4200 Qseven R2.0 CPU module w/ 4G memory soldered on module, w/ 32GB eMMC, -20~70°C(OEM Request)
EmQ-i2401D-N3350	Intel® Celeron® N3350 Qseven R2.0 CPU module w/ 4G memory soldered on module, w/ 32GB eMMC, -20~70°C(OEM Request)

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 PCIe1 lanes, I ² C 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.	-20°C ~ 85°C(-4~158°F) -20°C ~ 70°C for EmQ-i2401D series
Operating Humidity	10 ~ 95% @ 85°C (non-condensing)
Dimension (L x W)	70 x 70 mm (2.76" x 2.76")

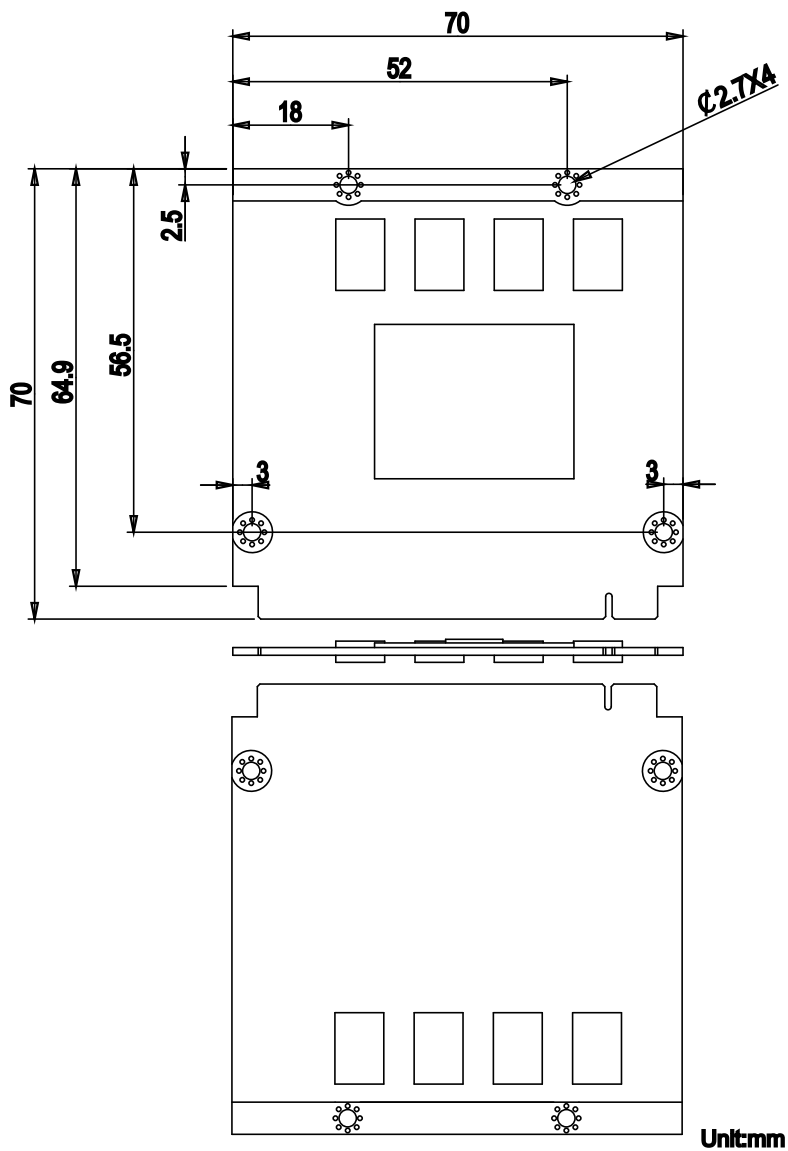
Driver Installation Note

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_Win10x64
TXE	\Apollolake-i240x\TXE

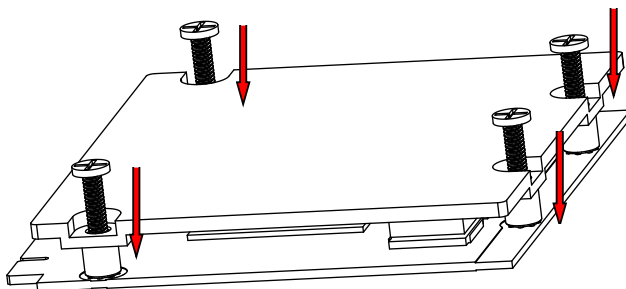
Board Dimensions



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 four screws.



Connector Pin Assignment

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	2	GND	65	Q7_AZ_SDATA_IN	66	I2C_CLK0
3	LAN1_MDI3-	4	LAN1_MDI2-	67	Q7_AZ_SDATA_OUT	68	I2C_DATA0
5	LAN1_MDI3+	6	LAN1_MDI2+	69	THRM#	70	WDTRIG#
7	LAN_LINK100#	8	LAN_LINK_1000#	71	THRMTRIP#	72	WDOUT(N/C)
9	LAN1_MDI1-	10	LAN1_MDI0-	73	GND	74	GND
11	LAN1_MDI1+	12	LAN1_MDI0+	75	USB3TXN0	76	USB3_RXN0
13	LED_LINK#	14	LAN_ACT#	77	USB3TXP0	78	USB3_RXP0
15	GBE_CTREF (N/C)	16	SLP_S4#	79	USB_6_7_OC# (N/C)	80	USB_4_5_OC#(N/C)
17	WAKE#	18	SLP_S3#	81	USB3TXN1	82	USB3_RXN1
19	SUS_STAT#	20	Q7_PWR_BTN#	83	USB3TXP1	84	USB3_RXP1
21	SLEEP#	22	LID#	85	USB_OC2/3	86	USB_OC0/1
23	GND	24	GND	87	USB_3N	88	USB_2N
	KEY		KEY	89	USB_3P	90	USB_2P
25	GND	26	CB_PWRGD	91	USB_CC(N/C)	92	Q-7_USB_ID(N/C)
27	Q7_BATLOW#	28	Q7_RSTBTN#	93	USB_1N	94	USB_0N
29	SATA_TXP0_C	30	SATA_TXP1_C	95	USB_1P	96	USB_0P
31	SATA_TXN0_C	32	SATA_TXN1_C	97	GND	98	GND
33	Q7_HDD_ACT#	34	GND	99	LVDS_A0+	100	LVDS_B0+
35	SATA_RXP0_C	36	SATA_RXP1_C	101	LVDS_A0-	102	LVDS_B0-
37	SATA_RXN0_C	38	SATA_RXN1_C	103	LVDS_A1+	104	LVDS_B1+
39	GND	40	GND	105	LVDS_A1-	106	LVDS_B1-
41	BIOS_DISABLE#	42	SD_CLK#	107	LVDS_A2+	108	LVDS_B2+
43	SD_CD#	44	SDIO_LED (N/C)	109	LVDS_A2-	110	LVDS_B2-
45	SD_CMD	46	SD_WP	111	Q7_VDDEN	112	Q7_BKLTEN
47	SD_PWR#	48	SD_DATA1	113	LVDS_A3+	114	LVDS_B3+
49	SD_DATA0	50	SD_DATA3	115	LVDS_A3-	116	LVDS_B3-
51	SD_DATA2	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	Q7_LCD_BKLT_CTRL	124	GP_1-Wire_Bus (N/C)
59	Q7_AZ_SYNC	60	SMB_CLK_RESUME	125	LVDS_I2C_DAT	126	eDP0_HPD#/LVDS_BLC_DAT (N/C)
61	Q7_AZ_RST#	62	SMB_DATA_RESUME	127	LVDS_I2C_CLK	128	eDP1_HPD#/LVDS_BLC_CLK (N/C)
63	Q7_AZ_BIT_CLK	64	Q7_SMB_ALERT#	129	CAN0_TX (N/C)	130	CAN0_RX (N/C)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
131	Q7_DDI0_TXP3	132	RSVD (N/C)	197	GND	198	GND
133	Q7_DDI0_TXN3	134	RSVD (N/C)	199	Q7_SPI_MOSI	200	Q7_SPI_CS#0
135	GND	136	GND	201	Q7_SPI_MISO	202	Q7_SPI_CS#1
137	Q7_DDI0_TXP1	138	DDI0_AUXP	203	Q7_SPI_CLK	204	MFG_NC4 (N/C)
139	Q7_DDI0_TXN1	140	DDI0_AUXN	205	VCC_5V_SB	206	VCC_5V_SB
141	GND	142	GND	207	MFG_NC0 (N/C)	208	MFG_NC2 (N/C)
143	Q7_DDI0_TXP2	144	RSVD (N/C)	209	MFG_NC1 (N/C)	210	MFG_NC3 (N/C)
145	Q7_DDI0_TXN2	146	RSVD (N/C)	211	VCC	212	VCC
147	GND	148	GND	213	VCC	214	VCC
149	Q7_DDI0_TXP0	150	DDI0_DDI0_DDC-DATA	215	VCC	216	VCC
151	Q7_DDI0_TXN0	152	DDI0_DDC_DDCCLK	217	VCC	218	VCC
153	Q7_DDI0_HPDET#_R	154	DP_HDP#_RSV	219	VCC	220	VCC
155	Q7_PCIE_CLKP1	156	PCIE_WAKE#	221	VCC	222	VCC
157	Q7_PCIE_CLKN1	158	PLTRST#_BUFF	223	VCC	224	VCC
159	GND	160	GND	225	VCC	226	VCC
161	Q7_PCIE_TXP3	162	PCIE_RXP3	227	VCC	228	VCC
163	Q7_PCIE_TXN3	164	PCIE_RXN3	229	VCC	230	VCC
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				