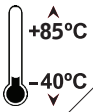
Wide Operating Temperature



QSM-653E

Wide Range Temperature Qseven® CPU Module

Quick Installation Guide

Version 1.1

Form Factor	CPU	Chipset
Qseven® CPU Module	***Soldered onboard Intel® Atom™ N2600 processor***	***Intel® PCH NM10***

Video	LAN	Audio
Single Channel 18-bit LVDS/ SDVO/ DDI port/ Analog RGB (Reserved-pin)	***Intel® 82583V Gigabit Ethernet***	***HD Audio Interface***

I/O
USB/ SATA/ PCIe x1/ LPC

♦ Technical Support

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

ftp://ftp.arbor.com.tw/pub/manual

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

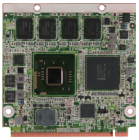
FCC Class A

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.

4046250600110P

Packing List

Before starting to install the single board, make sure the following items are shipped:



1 x QSM-653E Qseven® CPU Module

1 x Driver CD

1 x Quick Installation Guide

Ordering Information

QSM-653E	Intel® Atom™ N2600 1.6GHz WT Qseven® CPU module

Optional Accessories

HS-2506-F1	Heat Spreader (70.0 x 65.0x 8.0mm)
HS-0000-W3	Universal evaluation heatsink kit for Qseven® CPU module (70x70x30mm)
PBQ-3000	Qseven® EPIC evaluation board
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

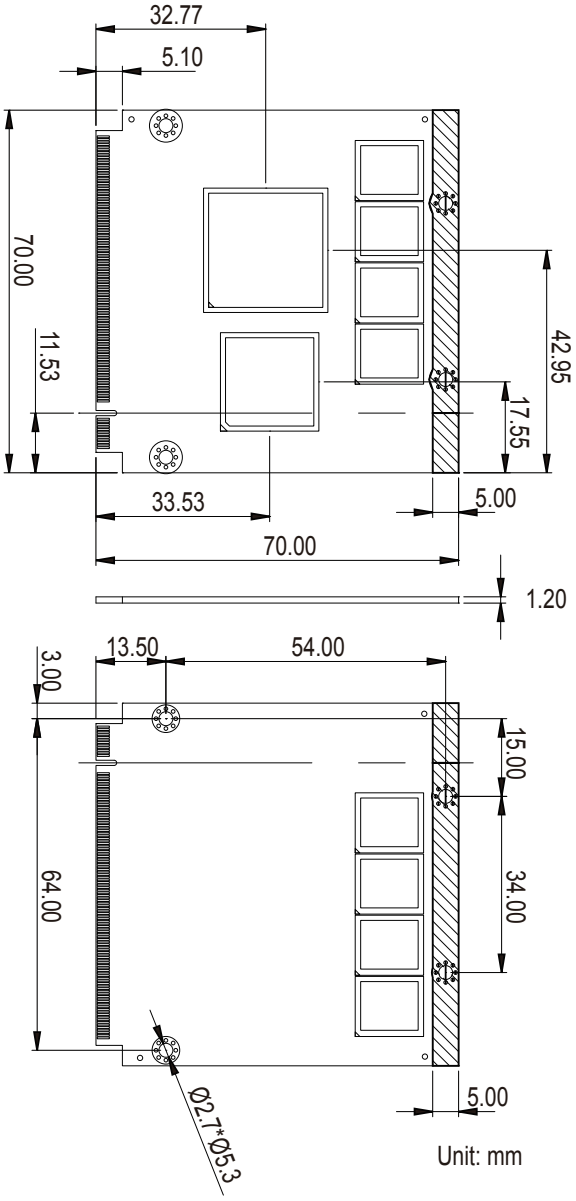
Form Factor	Qseven® CPU Module
CPU	Soldered onboard Intel® Atom™ N2600 1.6GHz processor
Chipset	Intel® PCH NM10
System Memory	Soldered onboard 2GB DDR3 SDRAM
Ethernet controller	1 x Intel® 82583V PCIe Gigabit Ethernet
BIOS	AMI PnP Flash UEFI BIOS
Storage	2 x Serial ATA ports w/ 300MB/s HDD transfer rate
Universal Serial Bus	8 x USB 2.0 ports, one of the ports can become USB client
Audio	HD Audio Link
Graphics Chipset	Integrated Intel® Graphics Media Accelerator 3600
Graphics Interface	LCD: Single Channel 18-bit LVDS, resolution up to 1366x768 Support Analog RGB signals (via Qseven® GF reserved pin) DDI port supported
Expansion Bus	3 x PCIe x1 lanes LPC (Low Pin Count) interface
Power Requirement	5V, 5VSB
Power Consumption	1.26A@+12V (Typical)
Operation Temp.	-40ºC ~ 85ºC (-40ºF ~ 185ºF)
Operating Humidity	10 ~ 95% @ 85ºC (non-condensing)
Watchdog Timer	1~ 255 levels reset
Dimension (L x W)	70 x 70 mm (2.76” x 2.76”)

Find Device Drivers on CD

Windows 7

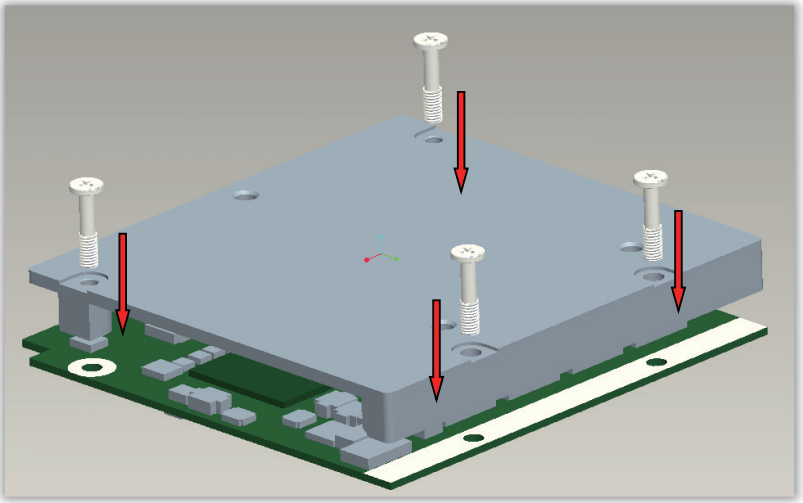
Device	Driver Path
Chipset	\i250x\CHIPSET\Win7_x86
LAN	\EmCORE-i65M3\ETHERNET\Win7_82583V
VGA	\i250x\GRAPHICS\win7_x86_8.14.8.1065

Board Dimensions

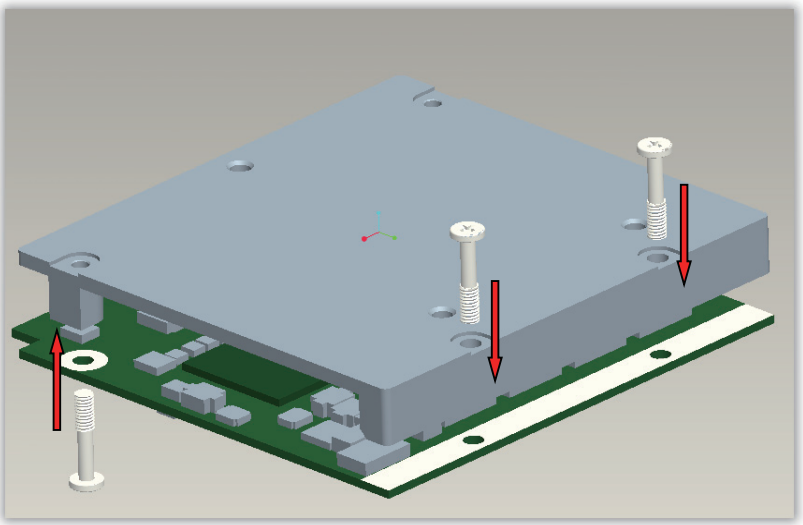


Heatsink Installation

1. Put the heatsink and screw it on in the direction shown in the figure below.
2. There are two mothods to install the heatsink.
   2.1. Insert four screws downward into the holes and turn them tightly.



   2.2. Insert two screws downward and two screws upward into the holes and turn them tightly.



Connector Pin Assignments

Note: A pin with a remark “N/C“ is a pin that the signal isn’t available on this board while the remark beyond the bracket delivers the consortium-specified definition.

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#	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# (N/C)
43	SDIO_CD# (N/C)	44	SDIO_LED (N/C)
45	SDIO_CMD (N/C)	46	SDIO_WP (N/C)
47	SDIO_PWR# (N/C)	48	SDIO_DAT1 (N/C)
49	SDIO_DAT0 (N/C)	50	SDIO_DAT3 (N/C)
51	SDIO_DAT2 (N/C)	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	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 (N/C)
67	HDA_SDO	68	I2C_DAT (N/C)
69	THRM#	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_ PRES#	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
127	LVDS_DID_CLK	128	LVDS_BLC_CLK
129	CAN0_TX (N/C)	130	CAN0_RX (N/C)

Pin	Signal	Pin	Signal
131	DP3+	132	SDVO_INT+ (N/C)
133	DP3-	134	SDVO_INT- (N/C)
135	GND	136	GND
137	DP1+	138	SDVO_FLDSTALL+/DPAUX+
139	DP1-	140	SDVO_FLDSTALL-/DPAUX-
141	GND	142	GND
143	DP2+	144	SDVO_TVCLKIN+ (N/C)
145	DP2-	146	SDVO_TVCLKIN- (N/C)
147	GND	148	GND
149	SDVO_R+/DP0+	150	SDVO_CTRL_DAT
151	SDVO_R-/DP0-	152	SDVO_CTRL_CLK
153	HDMI_HPD#	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+	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_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	SPI_MOSI	200	SPI_CS0#
201	SPI_MISO	202	SPI_CS1# (N/C)
203	SPI_SCLK	204	MFG_NC4
205	VCC_5V_SB	206	VCC_5V_SB
207	MFG_NC0	208	MFG_NC2
209	MFG_NC1	210	MFG_NC3
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

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