

**Full-size PICMG 1.3 CPU Card supports LGA1155 Intel® CPU per Intel® Q67, DDR3, VGA /DVI-D, Dual Intel® PCIe GbE, SATA 6Gb/s, mini PCIe, HD Audio and RoHS**

# **PCIE-Q670**

## **Quick Installation Guide**

### **Version 1.0**

Oct. 04, 2011

#### **Package Contents**

PCIE-Q670 package includes the following items:

- 1 x PCIE-Q670 Single Board Computer
- 1 x Dual RS-232 Cable (P/N:19800-000051-RS)
- 4 x SATA Cable (P/N:32000-0628000-RS)
- 1 x USB Cable (P/N: CB-USB02-RS)
- 1 x KB/MS Y Cable (P/N: 32000-133200-RS)
- 1 x DVI and USB Kit (P/N:IO-KIT-001-R20)( DVI SKU only)
- 1 x Mini Jumper Pack
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)



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## Specifications

- LGA1155 socket supports Intel® Core™ i7/i5/i3 Quad/ Dual core processor
- System Chipset: Intel® Q67
- BIOS: UEFI BIOS
- System Memory: Two 240-pin 1066/1333MHz Dual-Channel DDR3 SDRAM ECC and non-ECC Unbuffered DIMM supported (system max.16GB)
- Graphic: VGA Integrated in Intel® Q67
- Display Output:
  - 1 x VGA
  - 1 x DVI-D (DVI SKU only)
  - (2 x 13-pin pin header via IO-KIT-001-R20 DVI-D/USB Module)
- Ethernet:
  - Intel® 82583V PCIe controller
  - Intel® 82579 PHY with Intel® AMT 7.0 supported
- Super I/O: Fintek F81866
- I/O Interface:
  - 2 x RS-232
  - 1 x RS-422/485
  - 10 x USB 2.0 (2 by Rear IO, 8 by pin header)
  - 4 x SATA 3Gb/s
  - 2 x SATA 6Gb/s
  - Raid 0/1/5/10 supported
  - 1 x LPT
  - 1 x FDD
  - 1 x 6-pin wafer for KB/MS
- Digital I/O: 8-bit Digital I/O (4-bit input, 4-bit output)
- Infrared Interface: 1 x 5-pin infrared connector
- Audio: Supports by IEI AC-KIT-888HD Audio Kit
- Front Audio:2 x 5-pin pin header
- TPM: 2 x 10-pin pin header
- SMBus: 1 x 4-pin wafer
- I2C: 1 x 4-pin wafer
- Infrared Interface: 1 x 5-pin pin header
- Expansion:
  - PCIe signal and PCI signal via golden finger
  - 1 x mini PCIe slot

- Watchdog Timer: software Programmable support 1~255 sec. System reset
- FAN connector: 1 x 4-pin Smart FAN Connector
- Power Supply: 5V/12V, AT/ATX support  
Power Consumption: 3.3V@1.69A, 5V@3.45A, 12V@0.32A, Vcore@5.24A, 5Vsb@0.17 (Intel® Core™ i7-2600 3.40GHz CPU with 1333MHz DDR3 2GB x 2 memory)
- Operation Temperature: -10 ~ 60°C( 14°F ~ 140°F)
- Operation Humidity: 5% ~ 95%, non-condensing
- Dimensions: 338mm X 126mm
- Weight: 1.2Kg

## Ordering Information

**PCIE-Q670-R10:** Full-size PICMG 1.3 CPU Card supports 32nm LGA1155 Intel® Core™ i7/i5/i3 CPU per Intel® Q67, DDR3, DVI-I, Dual Intel® PCIe GbE, 2 SATA III, PCIe mini, Audio and RoHS

**32200-074800-RS:** RS-422/485 cable, 200mm

**19800-000075-RS:** KB/MS cable with Bracket

**SAIDE-KIT01-R10:** SATA to IDE/CF Converter board

**IO-KIT-001-R20:** DVI and four USB 1.1/2.0 translation daughter board

**32102-000100-200-RS:** SATA Power Cable

**32200-000017-RS:** FDD flat cable

**32200-015100-RS:** LPT Cable

**AC-KIT-888HD-R10:** 7.1 channel HD Audio kit with Realtek ALC888 support dual audio streams

**CF-1156A-RS-R10:** High performance LGA1155/LGA1156 Cooler kit, 1U Chassis compatible, 73W

**CF-1156B-RS-R10:** High performance LGA1155/LGA1156 Cooler kit, 95W

# Jumpers setting and Connectors

## Table of Jumpers

LABEL	FUNCTION
J_CMOS1	CMOS state setting
WOL_SEL1	WOL Enable setting
JATX_AT1	Power Mode Setting

## Table of Connectors

LABEL	FUNCTION
VGA1	VGA 15-pin Female Connector
USB_C1 USB_C2	USB Port Connector
LAN1、LAN2	RJ45 LAN Connector
KB_MS1	Internal PS/2 KEYBOARD/MOUSE Connector
COM1 COM2	Internal Serial Port DB-9 Connectors
USB1 USB2 USB3 USB4 USB5 USB6	Internal USB Connectors
J_AUDIO1	Extend Audio Module Connector
SATA1 SATA2 SATA3 SATA4 SATA5 SATA6	Serial ATA Connectors
IR1	IrDA Infrared Interface Connector
FDD1	Internal FDD Connector
LPT1	Internal LPT Connector
DVI1	DVI-D connector (DVI SKU only)
CPU_FAN1	Fan Connector
DIO1	Digital I/O Connector
F_PANEL1	PWR & RST Buttons and Indicators
CPU12V1	ATX-12V CPU Power Source
MINI-PCIE1	PCI-E Mini Card
I2C_1	I2C Connector
SMBUS_1	SMBUS Connector
TPM1	TPM Connector(80 port CONN)
COM 4	RS422/485 Serial Port

<b>J_CMOS1 : Clear CMOS setting Jumper</b>	
<b>J_CMOS1</b>	<b>DESCRIPTION</b>
1-2 (Default)	Normal
2-3	Clear CMOS Data

<b>JATX_AT1 : Power Mode Setting by ATX or AT</b>	
<b>JATX_AT1</b>	<b>DESCRIPTION</b>
1-2 (ON)	ATX Power Mode
1-2 (OFF)	AT Power Mode

<b>VGA1 : 15-pin Female Connector</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	VCC	10	GND
11	NC	12	DDCDAT
13	HSYNC	14	VSYNC
15	DDCCLK		

<b>USB_C01,USB_C02</b>	
<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	VCC
2	DATA-
3	DATA+
4	GROUND

<b>LAN1、LAN2: RJ45 LAN Connector</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	MDIA3-	5	MDIA1+
2	MDIA3+	6	MDIA2+-
3.	MDIA2-	7	MDIA0-
4.	MDIA1-	8	MDIA0+

<b>MS/KB1: Internal 6-pin Keyboard Connector</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
1	VCC(+5V)
2	Mouse Data
3	Mouse Clock
4	Keyboard Data
5	Keyboard Clock
6	Ground

<b>COM1,COM2: Internal Serial Port Connector</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	DCD#	2	DSR#
3	RXD	4	RTS#
5	TXD	6	CTS#
7	DTR#	8	RI#
9	GND	10	NC

<b>USB1-USB6: Internal USB Connector</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	VCC	2	GND
3	DATA-	4	DATA+
5	DATA+	6	DATA-
7	GND	8	VCC

<b>J_AUDIO1 : External Audio Module Connector</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	ACZ_SYNC	2	ACZ_BITCLK
3	ACZ_SDOUT	4	ACZ_PCBEEP
5	ACZ_SDIN	6	ACZ_RST#
7	ACZ_VCC(+5V)	8	ACZ_GND
9	ACZ_12V	10	ACZ_GND

<b>SATA1-SATA6 : Serial ATA Connector</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	GND	5	RX-
2	TX+	6	RX+
3	TX-	7	GND
4	GND		

<b>IR1: IrDA connector</b>	
<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	VCC
2	NC
3	IR-RX
4	GND
5	IR-TX

<b>FDD1: Floppy Disk Drive Connector</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	GND	2	REDUCE WRITE
3	GND	4	N/C
5	N/C	6	N/C
7	GND	8	INDEX#
9	GND	10	MOTOR ENABLE A#
11	GND	12	DRIVE SELECT B#
13	GND	14	DRIVE SELECT A#
15	GND	16	MOTOR ENABLE B#
17	GND	18	DIRECTION#
19	GND	20	STEP#
21	GND	22	WRITE DATA#
23	GND	24	WRITE GATE#
25	GND	26	TRACK 0#
27	GND	28	WRITE PROTECT#
29	GND	30	READ DATA#
31	GND	32	SIDE 1 SELECT#
33	GND	34	DISK CHANGE#

<b>LPT1 : Parallel Port Connector</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	STROBE#	14	AUTO FORM FEED #
2	DATA0	15	ERROR#
3	DATA1	16	INITIALIZE#
4	DATA2	17	PRINTER SELECT LN#
5	DATA3	18	GND
6	DATA4	19	GND
7	DATA5	20	GND
8	DATA6	21	GND
9	DATA7	22	GND
10	ACKNOWLEDGE#	23	GND
11	BUSY	24	GND
12	PAPER EMPTY	25	GND
13	PRINTER SELECT		

<b>DVI Connector (DVI SKU only)</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	Data 2-	14	VCC
2	Data 2+	15	GND
3	GND	16	Hot Plug Detect.
4	N/C	17	Data 0-
5	N/C	18	Data 0+
6	DDC Clock	19	GND
7	DDC Data	20	N/C
8	N/C	21	N/C
9	Data 1-	22	GND
10	Data 1+	23	Clock +
11	GND	24	Clock -
12	N/C	25	GND
13	N/C		



<b>CPU_FAN1 : CPU Fan Connector</b>	
<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	Ground
2	+12V
3	Rotation Signal
4	Control

<b>DIO1 : Digital Input / Output Connector</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	Ground	2	VCC
3	Output 3	4	Output 2
5	Output 1	6	Output 0
7	Input 3	8	Input 2
9	Input 1	10	Input 0

<b>F_PANEL1 : External Switches and Indicators panel</b>					
	<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>	
Power LED	1	+5V	2	+5V	Speaker
	3	N/C	4	N/C	
	5	GROUND	6	N/C	
PWRBTN	7	PWRBTN+	8	Speaker	RESET
	9	PWRBTN-	10	N/C	
HDDLED	11	+5V	12	Reset-	RESET
	13	HDLED-	14	GND	

<b>CPU12V1: ATX-12V CPU Power Input connector</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	GND	2	GND
3	+12V	4	+12V

<b>MINI-PCIE1 : PCI-E Mini Card Connector</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	PCIE_WAKE#	2	VCC3
3	N/C	4	GND
5	N/C	6	1.5V
7	CLKREQ#	8	LFRAME#
9	GND	10	LAD3
11	CLK-	12	LAD2
13	CLK+	14	LAD1
15	GND	16	LAD0
17	PCIRST#	18	GND
19	LPC	20	VCC3
21	GND	22	PCIRST#
23	PERN2	24	3VDual
25	PERP2	26	GND
27	GND	28	1.5V
29	GND	30	SMBCLK
31	PETN2	32	SMBDATA
33	PETP2	34	GND
35	GND	36	USB-
37	N/C	38	USB+
39	N/C	40	GND
41	N/C	42	N/C
43	N/C	44	RF_LINK#
45	N/C	46	BLUELED#
47	N/C	48	1.5V
49	N/C	50	GND
51	N/C	52	VCC3

<b>I2C_1</b>	
<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	GND
2	PCH_GP38_PU
3	PCH_GP39_PU
4	+V5S

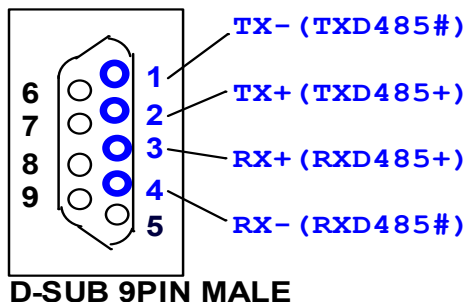
SMBUS Connector	
PIN NO.	DESCRIPTION
1	GND
2	SMB_DATA
3	SMB_CLK
4	+V5S

TPM1 Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	CLK	2	GND
3	FRAME#	4	NC
5	RERST#	6	+5V
7	AD3	8	AD2
9	+3V	10	AD1
11	AD0	12	GND
13	SMB_CLK	14	SMB_DATA
15	SB3V	16	SERIRQ
17	GND	18	CLKRUN#
19	PM_SUS_STAT#	20	DRQ#

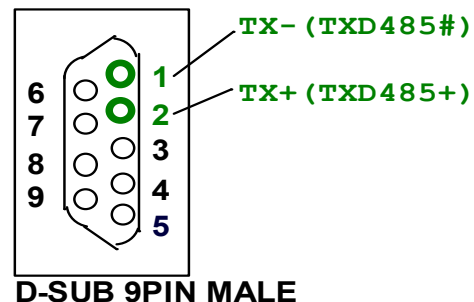
COM4 : Internal Serial Port Connector (RS422/485)	
PIN NO.	DESCRIPTION
1	RXD485#
2	RXD485+
3	RXD485-
4	RXD485#

### RS422/485

#### RS422 Pin define



#### RS485 Pin define



# Board Layout: Jumper and Connector Locations

