GIGAIPC

QBi-5005A
QBi-5005B
QBi-4000B

Embedded Compact Board
User's Manual 1st Ed

www.gigaipc.com   GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

Copyright Notice

This document is copyrighted, 2018. All rights are reserved. The original manufacturer reserves the right to make improvements to the products described in this manual at any time without notice.

No part of this manual may be reproduced, copied, translat¬ed, or transmitted in any form or by any means without the prior written permission of the original manufacturer. Information provided in this manual is intended to be accurate and reliable. However, the original manufacturer assumes no respon¬sibility for its use, or for any in¬fringements upon the rights of third parties that may result from its use.

The material in this document is for product information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, GIGAIPC assumes no liabilities resulting from errors or omissions in this document, or from the use of the information contained herein.

GIGAIPC reserves the right to make changes in the product design without notice to its users.

GIGAIPC

Acknowledgement

All other products' name or trademarks are properties of their respective owners.

- AMD® is trademark of Advanced Micro Devices.
- Microsoft Windows is a registered trademark of Microsoft Corp.
- Intel, Pentium, Celeron, and Xeon are registered trademarks of Intel Corporation
- Core, Atom are trademarks of Intel Corporation
- ITE is a trademark of Integrated Technology Express, Inc.
- IBM, PC/AT, PS/2, and VGA are trademarks of International Business Machines Corporation.

All other product names or trademarks are properties of their respective owners.

Packing List

Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
QBi-5005A or QBi-5005B or QBi-4000B	1
SATA power cable, 150 mm	1
SATA FPC cable, 100 mm	1

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

GIGAIPC

About this Document

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the GIGAIPC.com for the latest version of this document.

Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.

2. Make sure the power source matches the power rating of the device.

3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.

4. Always completely disconnect the power before working on the system's hardware.

5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.

6. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.

7. Always disconnect this device from any AC supply before cleaning.

8. While cleaning, use a damp cloth instead of liquid or spray detergents.

9. Make sure the device is installed near a power outlet and is easily accessible.

10. Keep this device away from humidity.

11. Place the device on a solid surface during installation to prevent falls

12. Do not cover the openings on the device to ensure optimal heat dissipation.

13. Watch out for high temperatures when the system is running.

14. Do not touch the heat sink or heat spreader when the system is running

15. Never pour any liquid into the openings. This could cause fire or electric shock.

16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.

17. If any of the following situations arises, please the contact our service personnel:
    i.   Damaged power cord or plug
    ii. Liquid intrusion to the device
    iii. Exposure to moisture
    iv. Device is not working as expected or in a manner as described in this manual
    v.   The device is dropped or damaged
    vi. Any obvious signs of damage displayed on the device

18. **DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.**

7   www.gigaipc.com

FCC Statement

Warning! This device complies with Part 15 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.

Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte.
Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur.
Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

GIGAIPC

China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量
GIGAIPC Main Board/ Daughter Board/ Backplane

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板 及其电子组件	○	○	○	○	○	○
外部信号 连接器及线材	○	○	○	○	○	○

O：表示该有毒有害物质在该部件所有均质材料中的含量均在
SJ/T 11363-2006 标准规定的限量要求以下。
X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出
SJ/T 11363-2006 标准规定的限量要求。
备注：此产品所标示之环保使用期限，系指在一般正常使用状况下。

China RoHS Requirement (EN)

Poisonous or Hazardous Substances or Elements in Products
GIGAIPC Main Board/ Daughter Board/ Backplane

| Component	Poisonous or Hazardous Substances or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
PCB & Other Components	O	O	O	O	O	○
Wires & Connectors for External Connections	O	O	O	O	O	O
O : The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement. X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement. Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only						

Table Contents

www.gigaipc.com

Chapter 2 – Hardware Information 17

Chapter 1

Chapter1 - Product Specifications
QBi-5005A/ QBI-5005B/ QBi-4000B

    GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

16.24
0.00
12.00
24.00
39.82
66.90
94.00
105.00
12.00

0.00
25.92
53.90
72.50
89.51
105.00
13.80
16.24

0.00
99.30
105.00
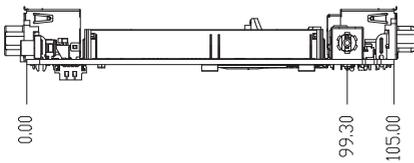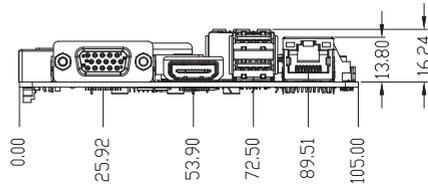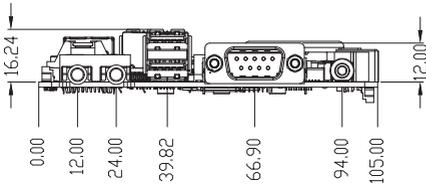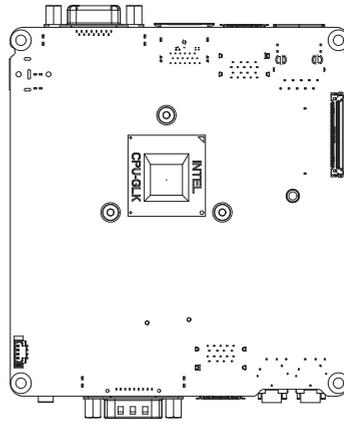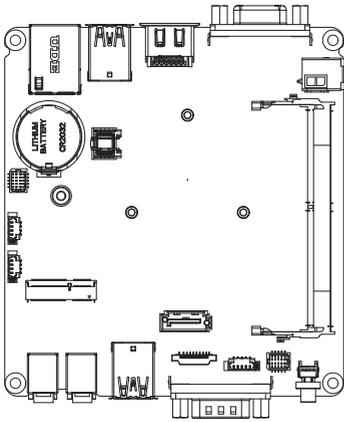
1.1   Specifications- QBi-5005A/QBi-5005B/QBi-4000B

Motherboard	QBi-5005A	QBi-5005B	QBi-4000B
Form Factor	Embedded Compact Board 105W x 110D mm		
CPU	Intel® Pentium® Silver J5005 Processor 4M Cache, up to 2.80 GHz	Intel® Pentium® Silver J5005 Processor 4M Cache, up to 2.80 GHz	Intel® Celeron® N4000 Processor 4M Cache, up to 2.60 GHz
	4M Cache		
Socket	1 x FCBGA1090		
Chipset	—		
Memory	1 x DDR4 SO-DIMM socket Max. Capacity 8 GB Support DDR 2400MHz		
Ethernet	1 x GbE LAN port (Realtek® RTL8111HS)		
Video	Integrated Graphics Processor -Intel® UHD Graphics 605 1 x HDMI1.4 port, supporting a maximum resolution of 4096 x 2160@30 Hz 1 x D-SUB port: max. resolution 2560 x 1600 at 60Hz (with compatible displays) 1 x eDP port, supporting a maximum resolution of 1920 x 1080@60Hz		
Audio	Realtek ALC255 High Definition Audio		
Storage	2 x SATA 6Gb/s ports, 1 x eMMC 32GB	2 x SATA 6Gb/s ports	2 x SATA 6Gb/s ports
Raid	—		
Expansion Slots	1 x M.2 slot: - E-key - Supports NGFF-2230 (WiFi/BT)		

www.gigaipc.com   GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

Motherboard	QBi-5005A	QBi-5005B	QBi-4000B
Internal I/O	1 x SATA 6Gb/s connector 1 x SATA 6Gb/s connector (FPC connector) 1 x CPU fan header 2 x USB 2.0/1.1 headers 1 x LPC header 1 x Front panel header 1 x eDP connector		
Front I/O	2 x USB3.0 1 x Power button 1 x COM Port (RS232) 1 x Headphone Jack 1 x Microphone Jack		
Rear I/O	1 x HDMI 1 x VGA 1 x RJ45 2 x USB3.0		
Side I/O	1 x DC_IN Jack (12~19V)		
TPM	—		
OS Compatibility	Windows 10 (x64)		
PSU Connectors	DC Jack 12~19V		
Operating Properties	Operating temperature: 0°C to 60°C Operating humidity: 0-90% (non-condensing) Non-operating temperature: -20°C to 70°C Non-operating humidity: 0%-95% (non-condensing)		

QBi Series - 10" x 10" Embedded Compact Board QBi-5005A/ QBi-5005B/ QBi-4000B

Chapter 2

Chapter 2 – Hardware Information

GIGAIPC reserves the right to modify or revise the content at anytime without prior notice.

2.1　Jumpers and Connectors
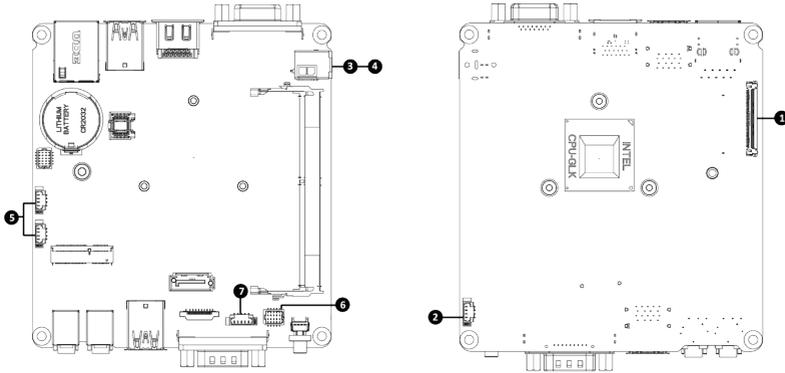
No	Code	Description
1	EDP	Embedded Display Port Connector
2	CPU_FAN	FAN
3	DC_IN	—
5	F_USB2_1 F_USB2_2	USB 2.0 Header
6	F_PANEL	Front Panel Header
7	SATA_PWR_0	Sata Power Connector

2.2.1 EDP (Embedded Display Port Connector)

1

Pin1 →

EDP
Pin 1
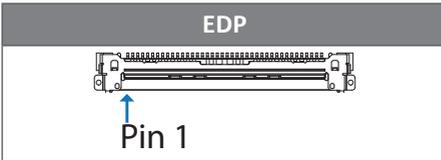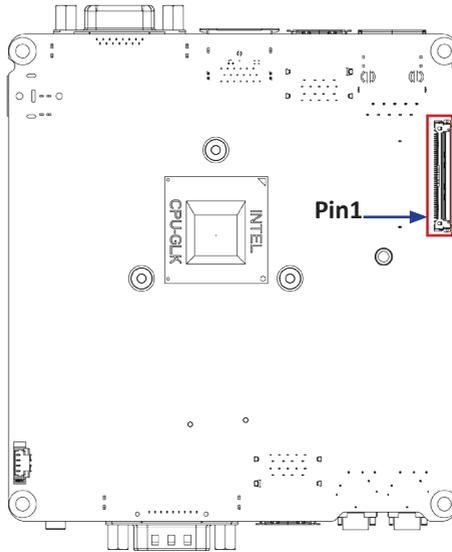
Pin No.	Definition	Pin No.	Definition
1	NC	21	+LCD_VCC (5V)
2	GND	22	NC
3	EDP_LANN3	23	GND
4	EDP_LANP3	24	GND
5	GND	25	GND
6	EDP_LANN2	26	GND
7	EDP_LANP2	27	EDP_HPD_3V3
8	GND	28	GND
9	EDP_LANN1	29	GND
10	EDP_LANP1	30	GND
11	GND	31	GND
12	EDP_LANN0	32	EDP_BKLTEN_3V3
13	EDP_LANP0	33	EDP_BKLCTL_3V3
14	GND	34	NC
15	EDP_AUX_C_DP	35	NC
16	EDP_AUX_C_DN	36	+BL_PWR DCIN)
17	GND	37	+BL_PWR (DCIN)
18	+LCD_VCC (5V)	38	+BL_PWR (DCIN)
19	+LCD_VCC (5V)	39	+BL_PWR (DCIN)
20	+LCD_VCC (5V)	40	NC

2.2.2　CPU_FAN

2

Pin1

CPU_FAN
Pin 1
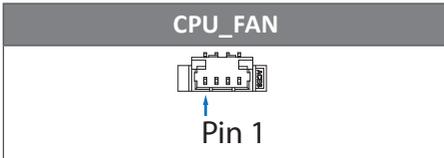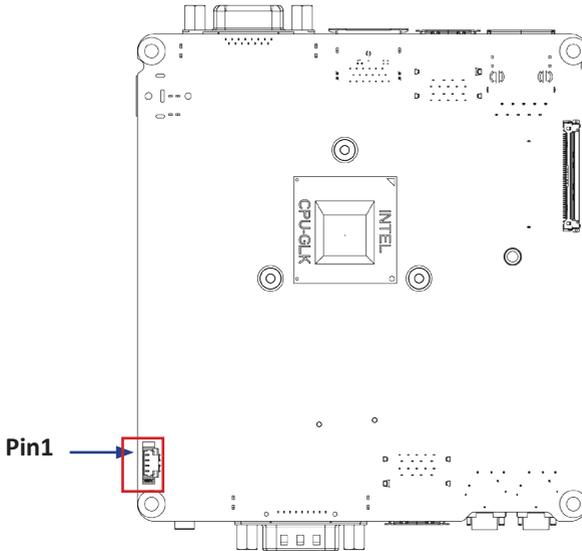
Pin No.	Definition
1	GND
2	5V
3	Detect
4	Speed Control

2.2.3   DC_IN

❸

DC_IN
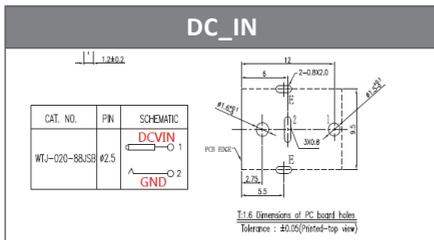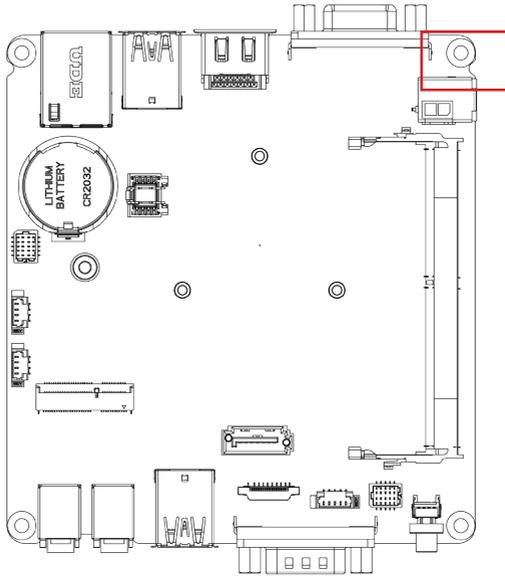
Pin No.	Definition
1	DCVIN (PIN)
2	GND (RING)

2.2.5   F_USB2_1, F_USB2_2 (USB 2.0 Header)

5

Pin1

Pin1

USB 2.0 Header
Pin 1
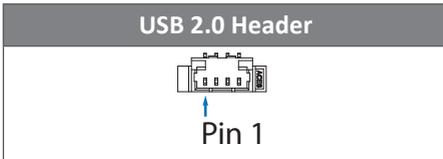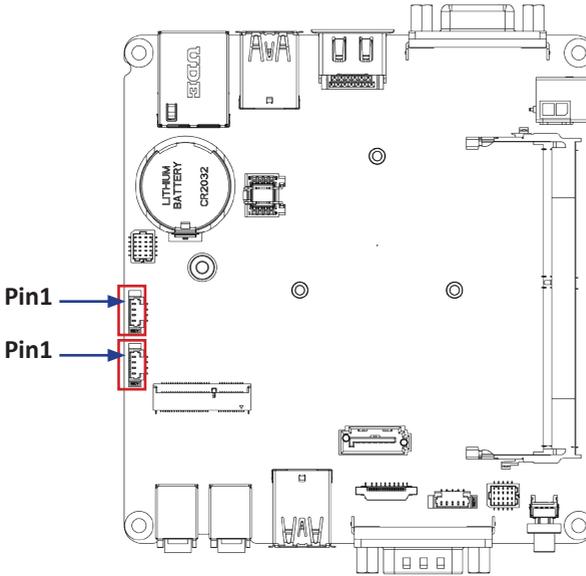
Pin No.	Definition
1	FUSEVCC
2	USBN5_C
3	USBP5_C
4	GND

2.2.6   F_PANEL (Front Panel Header)

6
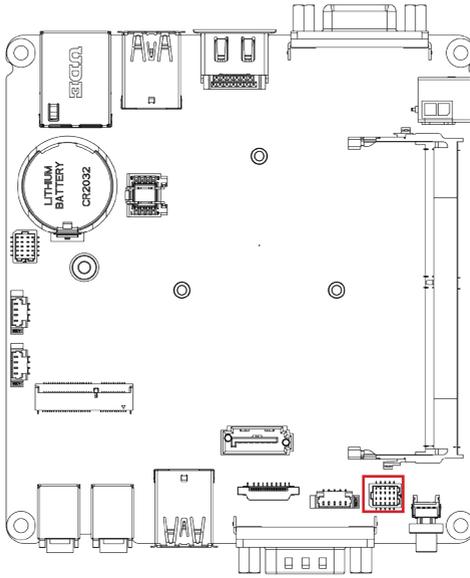
F_PANEL (Front Panel Header)
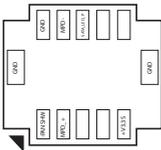
Pin No.	Definition
1	SATA_LED_P
2	MPD_+
3	GND (SATA_LEN_N)
4	MPD-
5	—
6	-PANSHW (Power BTN)
7	PMU_RSTBTN_N (Reset BTN)
8	—
9	+V3.3A
10	—

2.2.7 SATA_PWR_0 (Sata Power Connector)

7

SATA_PWR_0 (Sata Power Connector)		Pin No.	Definition
		1	+V5S
Pin 1		2	+V5S
		3	+V3.3S
		4	GND
		5	GND