

PCE-7131/5131/5031 LGA1151 Intel® Core™ i7/i5/i3/ Pentium® ECC/non-ECC (PCE-7131) PICMG 1.3 Single Host Board with (ECC/non-ECC) DDR4/M.2 (2280)/ Dual GbE LAN Startup Manual

Packing List

Before you begin installing your card, please make sure that the following items have been shipped:

1. PCE-7131/5131/5031 PICMG 1.3 Single Host Board
2. PCE-7131/5131/5031 Startup Manual
3. Serial ATA HDD data cables
4. Serial ATA HDD power cables
5. COM port cable kit
6. 2-port USB cable kit
7. Keyboard and mouse Y cable
8. Jumper package
9. Warranty card

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

- Note 1:** For detailed contents of PCE-7131/5131/5031, please refer to user manual on the Advantech Website.
- Note 2:** Acrobat Reader is required to view any PDF file. Acrobat Reader can be downloaded at: get.adobe.com/reader (Acrobat is a trademark of Adobe)

For more information on this and other Advantech products, please visit our website at:

<http://www.advantech.com>



For technical support and service, please visit our support website at:

<https://advt.ch/suppo1aa86>



Register your products on our website and get 2 months extra warranty for Free at:

<http://www.register.advantech.com>



This manual is for the PCE-5031/5131/7131

Part No. 2041503102
Printed in China

3rd Edition
October 2022

Specifications

General

- LGA1151 8th and 9th Intel® Core™ i7/i5/i3/Pentium®/Xeon®

Note: 8th Gen CPU is compatible with V1.XX, 9th Gen CPU is compatible with V1.XX and V2.XX BIOS

- **BIOS:** AMI 256 Mb SPI BIOS
- **Chipset:**
 - PCE-7131: Intel® C246
 - PCE-5131: Intel® Q370
 - PCE-5031: Intel® H310
- **System memory:**
 - PCE-7131: Supports dual channel DDR4 2400/2666 16GB per DIMM with ECC/non-ECC; Max. capacity is up to 32GB
 - PCE-5131/5031: Supports dual channel DDR4 2400/2666 16GB per DIMM without ECC; Max. capacity is up to 32GB.

Note1: Please select Intel ECC supported processor to enable ECC function.

Note2: Supports DDR4 1024M x 8 memory technology.

- **SATA Ports:**
 - PCE-7131/5131 supports 5 x SATA3.0 ports with SW Raid 0, 1, 5, 10.
 - PCE-5031 supports 4 x SATA3.0 ports without Raid function.
- **M.2 Ports:** PCE-7131/5131 supports M.2 2280 type M module and compatible to SATA3.0 and PCI Express 3.0
- **Serial ports:** Two RS-232 with pin headers
- **Keyboard/mouse connector:** Supports one standard PS/2 keyboard and mouse connector and one external 6-pin header
- **Watchdog timer:** 255 level timer intervals
- **USB 2.0:** PCE-7131/5131/5031: 7 * USB 2.0 (Pin-header*2+USB Type A*1+, 4 on backplane)
- **USB 3.1:**
 - PCE-7131/5131: 6 * USB 3.1 (Gen1) (Pin-header*6), 1*USB3.1 (Gen2) (Rear I/O)
 - PCE-5031: 2 * USB 3.1 (Gen1) (Pin-header*2), 1 * USB 3.1 (Gen2) (Rear I/O)
- **GPIO:** One programmable 8-bit GPIO pin-header

VGA Interface

- **Chipset:** Intel® HD Graphics
- Shared system memory is subject to OS

Ethernet Interface

- **Chipset supports:**
 - LAN 1: I219LM (PCE-7131/5131); I219V(PCE-5031)
 - LAN 2: I210AT (PCE-7131); I210AT (PCE-5131/5031)
- **Connection:** 2 x on-board RJ-45 connectors with LED

Specifications

indicators.

Mechanical and Enviromental

- **Dimensions:** (L x W): 338 x 122 mm
- **Power supply voltage:** +12 V, +5 V, +3.3 V, +5 V_{SB}
- **Power requirements:**
 - CPU: Processor: Intel® Core™ i7-8700
 - Memory: 2 DDR4 2666 8 GB DIMMs
 - Voltage: +12 V, +5 V, +3.3 V, +5 V_{SB}, -12 V, -5 V
 - Current: 2.64 A, 1.23 A, 0.19 A, 0.09 A, 0.06 A, 0 A
 - Operating temperature: 0 ~ 60 °C (depending on CPU)
- **Weight:** 0.5 kg (weight of board)

Jumpers and Connectors

The board has a number of jumpers that allow you to configure your system to suit your application. The table below lists the function of each of the jumpers and connectors.

Connectors	
Label	Function
USB3C1	USB3 port1
LAN1	Intel® I219LM(PCE-7131/5131); Intel® I219V(PCE-5031)
LAN2	Intel® I210AT(PCE-7131); Intel® I210AT (PCE-5131/5031)
VGA1	VGA connector
KBMS1	External PS/2 keyboard and mouse connector
KBMS2	Internal PS/2 keyboard and mouse connector
HDAUD1	Advantech HD audio module expansion pin-header
LPC1	LPC module expansion pin-header
Sysfan1	4 PIN fan power connector for supporting PWM or DC fan
LANLED1	LANLED
USB11	USB port 10
USB45	USB port 5, 6
USB3H3	USB port 7, 8
USB3H2	USB3 port 3, 4
USB3H1	USB3 port 2,3
COM1	RS-232 (9-pin Box Header)
COM2	RS-232 (9-pin Box Header)
LPT1	Parallel port
SATA0 / M.2	SATA port 0
SATA 1~5	SATA Port 1 ~ 5
SPI_CN1	CMOS flash jig pin-header

Jumpers and Connectors (Cont.)

SPI1	CMOS ROM
DP1	Display port pin-header 1
DP2	Display port pin-header 1
JCMOS1	Clear CMOS
JME1	Clear ME
JFP1 + JFP2	Power Switch/Reset connector/External speaker/SATA HDD LED connector
JFP3 (Keyboard Lock and Power LED)	Power LED
	Suspend: Fast flash (ATX/AT)
	System On: ON (ATX/AT)
	System Off: OFF (ATX/AT)
CPUFAN1	CPU FAN Power connector
SYSFAN1	System FAN Power Connector for 1 system FAN
JCASE1	Case Open pin-header
JCASEOP_SW1	Case Open switch for always open or close
BAT1	Button battery socket
BAT2	External battery connector
GPIO1	GPIO pin header (SMD pitch-2.0 mm)
DIMMA1	Memory connector channel A
DIMMB1	Memory connector channel B

Jumpers

Label	Function
JCMOS1	CMOS clear
JME1	Clear ME data
JWDT1	Watchdog timer output selection
JOBS1	SIO Monitor Alarm



JCMOS1/JME1: Clear CMOS/ME data

Closed Pins	Result
1-2	Keep CMOS/ME data (Default)
2-3	Clear CMOS/ME data

Jumpers and Connectors (Cont.)



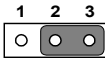
Closed



Open

H/W monitor alarm (JOBS1)

Function	Jumper Setting
Closed	Enable OBS alarm (Default)
Open	Disable OBS alarm



JWDT1: Watchdog timer output option

Closed Pins	Result
1-2	Reserved

Software Installation

2-3	System reset (Default)
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The drivers for the PCE-7131/5131/5031 are located on the software installation CD. Please click through the folder and follow the on-screen instructions.

Caution! The computer is supplied with a battery-powered real-time clock circuit. There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

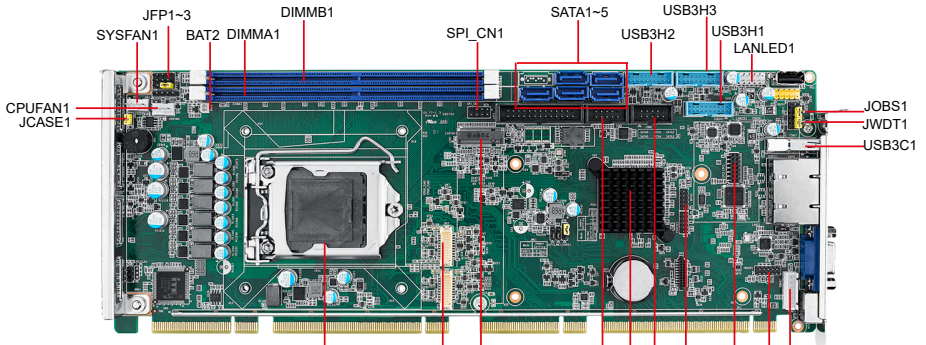


Declaration of Conformity

This device complies with the requirements in Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference;
2. This device must accept any interference received, including interference that may cause undesired operation.

Board Layout



- Note:**
- *PCE-5031 supports 4 SATA ports (SATA0~4) and one internal USB3.0 pin-header.
 - *PCE-5031 doesn't feature NGFF(M.2).
 - *PCE-5031 supports 1 DP port.