ADVANTECH

PCE-2029/2129 Compact Industrial Computer System with 6th/7th Gen Intel® Core™ i CPU Socket (LGA 1151) Startup Manual

Packing List

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

- PCE-2029/2129 Startup Manual
- Warranty card
- I/O bracket

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

Note: Acrobat Reader is required to view any PDF file. Acrobat Reader can be downloaded at: www.adobe.com/Products/acrobat/readstep2.html (Acrobat is a trademark of Adobe)

Specifications

Standard Functions

- **CPU:** LGA1151 6th and 7th Generation Intel® Core™ i7/i5/i3/Celeron/Pentium
- **Note:** Intel 7th generation processors only support Windows 10 (64-bit).
- **BIOS:** AMI 128 Mb SPI BIOS
- **Chipset:**
  - PCE-2029 : Intel® H110 chipset
  - PCE-2129 : Intel® Q170 chipset

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

http://www.advantech.com

http://www.advantech.com/eplatform

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

https://advt.ch/dd116

This manual is for the PCE-2029/2129 series Rev. A1.

Specifications (Cont.)

- **System memory:** Supports dual channel DDR4 SODIMM-2133/2400 MHz, 16 GB per slot without ECC function; Max. capacity is 32GB
- **Note:** Due to the inherent limitations of PC architecture, the system may not fully detect 64 GB RAM when 64 GB RAM is installed
- **SATA interface:** 2 on-board Serial ATAIII connectors support data transmission rate up to 600 MB/s. All two SATAIII ports support Advanced Host Controller Interface (AHCI) technology. Q170 can support RAID 0, 1, 5, 10.
- **LPC interface:** Advantech-designed LPC connector supports TPM module
- **Serial ports:** 4 serial ports: COM1, COM2 are RS-232/422/485, COM3,COM4 are RS-232 with BIOS menu options
- **Watchdog timer:** 1~255 sec/min timer level intervals
- **USB 3.0/2.0:** 8 USB ports:
  - PCE-2129 : 1/2/3/4/5/6 are USB 3.0, 7/8 USB2.0
  - PCE-2029 : 1/2/3/4 are USB 3.0, 5/6/7/8 USB2.0

Graphics

- **Q170:** Intel® HD Graphics 530, supports DirectX 12
- **H110:** Intel® HD Graphics 510, supports DirectX 12

Ethernet interface

- **Interface:** 10/100/1000 Mbps
- **Controller:**
  - PCE-2129 : LAN1: Intel® I219LM, LAN2: Intel® i210AT
  - PCE-2029 : LAN1: Intel® I219V, LAN2: Intel® i210AT

Audio

- Line-out
- Mic-in

Storage

- **SATA x 2**
- **mSATA x 1**
  - PCE-2129 : mSATA/MiniPCIe by Hardware Auto dection
  - PCE-2029 : mSATA

Mechanical and Environmental

- **Dimensions (L x W):** 180 x 127 mm (7.08" x 5")
- **Power Consumption:**
  Intel Core Intel i7-7700@ 3.60Ghz DDR4 16G x 2
  Maximum: +19V at 7.95A , +24V at 6.28A
- **Operating temperature:** 0 ~ 45° C (depending on CPU)
- **Weight:** 0.38 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 jumper and connector.

Connector / Jumper List

Label	Function
JWDT1+JOBS1	Watchdog Reset
LPC1	Low pin count connector for Advantech designed LPC modules
LAN1_USB2C1	LAN1 / USB 2.0 Port 7,8
LAN2_USB3C2	LAN2 / PCE-2129 : USB 3.0 Port5/6 PCE-2029 : USB 2.0 Port5/6
VGA1	VGA connector
HDMI1	HDMI connector
COM1-1	2 x RS232/422/485 (COM1, COM2)
COM3-1	2 x RS232 (COM3, COM4)
JFP1	Power Switch / Reset connector
JCASE1	Case Open connector
PSON1	AT(1-2) / ATX(2-3) mode selector
CPUFAN1	CPU FAN connector (4-pin)
AUDIO1	Audio connector (Line-out, Mic-In)
USB3C1	USB3.0 1/2/3/4
BIOS1	SPI flash card pin header
JCMOS1	CMOS clear
JME1	Intel ME Enable/Disable jumper
GPIO1	8 bit digital I/O connector
SW1	USB power mode and VGA mode change
USB2H1	USB port (Q170 only)
SW2	Power ON/OFF Switch
DP1	3rd Display output
SATA1/2	Serial ATA1/2
JCFG1	Reserve for RD debug
JSMB1	Reserve for RD debug

JCMOS1: CMOS and ME clear function

Pins	Result
1-2	Keep CMOS data*
2-3	Clear CMOS data
* Default	

*Keep CMOS data   Clear CMOS data

Jumpers and Connectors (Cont.)

PSON1: ATX, AT mode selector

Closed Pins	Result
1-2	AT Mode
2-3	ATX Mode*
* Default	
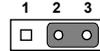
AT Mode 1-2 closed   *ATX Mode 2-3 closed

JFP1

Closed Pins	Result
1	Power ON/OFF
2,4	GND
3	System Reset
5	Watch Dog Clear

SW1

Switch	State	Setting
SW1-1	1* - 8	LAN1_USB2C1_1 / LAN2_USB3C2_1 not provide stand by charging
SW1-2	2* - 7	USB3C1 not provide stand by charging
SW1-3	3* - 6	USB2H1(Q170 only) not provide stand by charging
SW1-4	4* - 5	VGA is always on VGA will be ON by cable detected

JWDT1 + JOBS1

Closed Pins	Result
2-3*	Watch Dog Timer Reset
4-5*	Enable H/W monitor alarm

* Default setting

Caution! The computer is supplied with a battery-powered realtime clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer. Discard used batteries according to 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
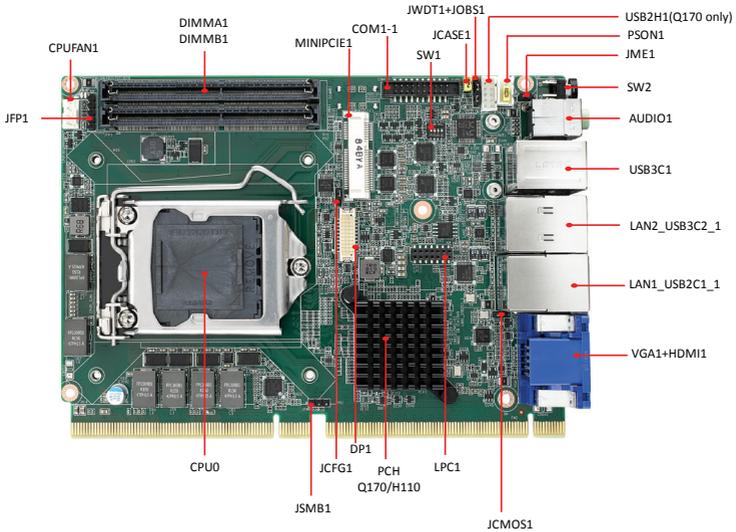
*Figure 1 : Front Side Board Layout: Jumper and Connector Locations*
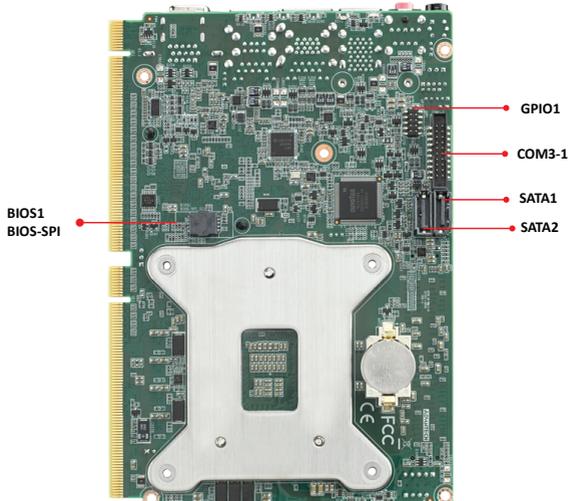
Figure2 : Rear side Jumper and Connector Locations