ADVANTECH

PCE-2033/2133 Compact Industrial Computer System with 12th/13th Gen Intel® Core™ i CPU Socket (LGA 1700)
Startup Manual

Packing List

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

• PCE-2033/2133 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: https://www.adobe.com/acrobat/pdf-reader.html (Acrobat is a trademark of Adobe).

Specifications

Standard Functions

• **CPU:** LGA1700 12th/13th Gen Intel® Core™ i7/i5/i3/Celeron®/Pentium®
• **BIOS:** AMI 256Mb (Q670E)/128Mb (H610E) SPI BIOS
• **Chipset:**
  - PCE-2033: Intel® H610E chipset
  - PCE-2133: Intel® Q670E chipset
• **System memory:** Supports dual channel DDR5 SO-DIMM-4800 MHz, 32 GB per slot without ECC function; Max. capacity is 64 GB.
Note: Due to the inherent limitations of the PC architecture, the system may not fully detect 64 GB RAM when 64 GB RAM is actually installed.
• **SATA interface:** The SATAIII connector supports data

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

http://www.advantech.com/support

This manual is for the PCE-2033/2133 series Rev. A1.

Specifications (Cont.)

transmission rates up to 600 MB/s. The SATAIII port supports Advanced Host Controller Interface (AHCI) technology. Q670E can support RAID 0, 1, 5, 10.
• **M.2 socket:** One M.2 socket supports up to PCIe x4 Gen 4 M-Key 2280 type storage devices (PCE-2133 only).
• **Serial ports:** 2 serial ports: COM1, COM2 are RS-232/422/485, with BIOS menu options.
• **Watchdog timer:** 1~255 sec/min timer level intervals
• **USB 3.2/2.0:** 8 x USB ports:
  - PCE-2133: 8 x USB 3.2 Gen 2
  - PCE-2033: 4 x USB 3.2 Gen1, 4 x USB 2.0

Graphics

• **Chipset:** CPU integrated graphics controller
• **Display memory:** 1 GB maximum shared memory with 2 GB and above system memory installed
• **HDMI:** Resolution up to 4096 x 2160 @ 60 Hz refresh rate
• **VGA:** Resolution up to 1920 x 1200 @ 60 Hz refresh rate
• **DP:** Resolution up to 4096 x 2160 @ 60 Hz via optional cable

Ethernet Interface

• **Interface:**
  - LAN1: 10/100/1000Mbps
  - LAN2: 10/100/1000/2500Mbps
• **Controller:**
  - PCE-2133: LAN1: Intel® I219LM, LAN2: Intel® I226V
  - PCE-2033: LAN1: Intel® I219V, LAN2: Intel® I226V

Audio

• Line-out
• Mic-in

Storage

• **NVMe M.2:** 1 (PCE-2133 only)
• **SATA:** 2 via gold finger to backplane
• **mSATA x 1:**
  - PCE-2133: mSATA / Mini PCIe by Hardware Auto detection
  - PCE-2033: mSATA

Mechanical and Environmental

• **Dimensions (L x W):** 188.6 x 127 mm (7.43" x 5")
• **Power Consumption:**
  Intel® Core™ Intel® I9-12900E, 32GB DDR5 x 2
  Maximum: DC: 19 ~ 24 V_{DC}, 8A ~ 6.5A
• **Operating Temperature:** 0 ~ 45°C (depending on CPU)
• **Weight:** 0.38 kg

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
AUDIO1	Audio connector (Line-out, Mic-In)
COM12	2 x RS232/422/485 (COM1, COM2)
CPUFAN1	CPU FAN connector (4-pin)
DIMMA1	DDR5 SODIMM slot
DIMMB1	DDR5 SODIMM slot
DP1	3rd Display output
ESPI1	Reserved for RD debug
GPIO1	8-bit digital I/O connector
HDMI1	HDMI connector
JCASE1	Case Open connector
JCMOS1	CMOS clear jumper
JFP1	Power Switch/Reset connector
JME1	Intel ME Enable/Disable jumper
JSMB1	Reserved for RD debug
JWDT1	Watchdog Reset
LAN1_USB3C1	PCE-2033: LAN, 2 x USB 3.2 Gen1 PCE-2133: LAN, 2 x USB 3.2 Gen2
LAN2_USB3C1	PCE-2033: LAN, 2 x USB 3.2 Gen1 PCE-2133: LAN, 2 x USB 3.2 Gen2
MINIPCIE1	mPCIe connector
NVME1	M-key M.2 connector (PCE-2133 Only)
PSON1	AT(1-2)/ATX(2-3) mode selector
SATA1~2	SATA connector
SPI1	SPI flash card pin header for BIOS
SW1	USB power mode, H/W monitor alarm mode and VGA mode change
SW2	Power ON/Off switch
USB2C1	USB 2.0 connector (PCE-2033 only)
USB2H1	USB 2.0 pin header (PCE-2133 only)
USB3C1	USB 3.2 connector (PCE-2133 only)
VGA1	VGA connector

JCMOS1/JME1: CMOS and ME Clear Function

Closed Pins	Result
1-2 *	Keep BIOS CMOS/ME data
2-3	Clear BIOS CMOS/ME data

*Keep data   Clear 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

Pin	Function
1	Power ON/OFF
2,4	GND
3	System Reset
5	Clear Watchdog

SW1

Switch	State	Setting
SW1-1	1* - 8	LAN1_USB3C1_1/LAN2_USB3C1 does not provide standby charging
SW1-2	2* - 7	USB3C1/USB2C1 does not provide standby charging
SW1-3	3* - 6	Enable H/W monitor alarm
SW1-4	4* - 5	VGA is always on. VGA will be ON when a cable is detected

JWDT1

Closed Pins	Result
1-2	Reserved
2-3*	Watchdog Timer Reset

* Default setting

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.
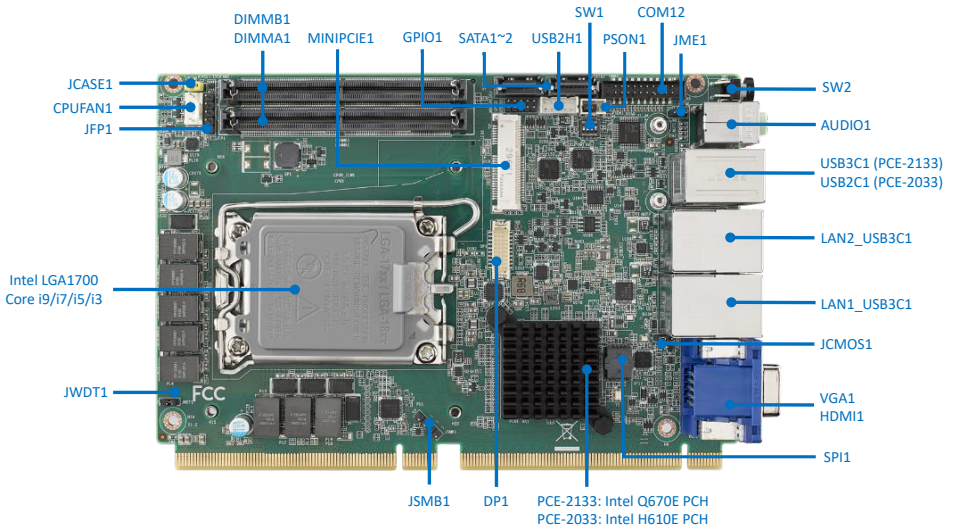
Board Layout

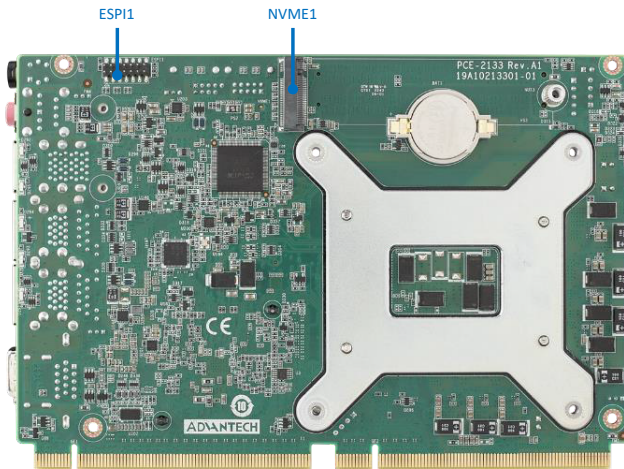*Figure 1 : Front-Side Board Layout: Jumper and Connector Locations*

Figure 2 : Rear-Side Jumper and Connector Locations