PCE-5133/5033 - LGA1700 Intel® Core™ i9/i7/i5/i3/ Pentium® ECC/non-ECC PICMG 1.3 Single Host Board with DDR5/M.2 (2280)/Dual 2.5GbE LAN Startup Manual

Packing List

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

1. PCE-5133/5033 PICMG 1.3 single host board
2. PCE-5133/5033 startup manual P/N: 2041513300
3. Serial ATA HDD data cables P/N: 1700003194
4. COM cable with bracket P/N: 1701090401

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

Note 1: For detailed contents of PCE-5133/5033, 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/PCE-5133G2

https://advt.ch/PCE-5033G2

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-5133/5033

Part No. 2041513300 1st Edition
Printed in China January 2023

Specifications

General

- LGA1700 12th Intel® Core™ i9/i7/i5/i3/Pentium®
- **BIOS:** AMI 256 Mb SPI BIOS
- **Chipset:**
  - PCE-5133: Intel R680E
  - PCE-5033: Intel H610E
- **System memory:**
  - PCE-5133: Supports dual channel DDR5 4800 32GB per DIMM with ECC/non-ECC; Max. capacity is up to 64GB
  - PCE-5033: Supports dual channel DDR5 4800 32GB per DIMM without ECC; Max. capacity is up to 64GB

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

Warning: Power must be turned off before plugging/unplugging memory stick to avoid system crash or damage of memory stick.

- **SATA Ports:**
  - PCE-5133: 6 x SATA3.0 ports with SW Raid 0,1,5,10.
  - PCE-5033: 4 x SATA3.0 ports without Raid function.
- **M.2 Ports:**
  - PCE-5133: M.2 2280 type M module and compatible to PCI Express 4.0
- **Serial ports:** 2 x RS-232 with pin headers
- **Watchdog timer:** 255 level timer intervals
- **USB 2.0:**
  - PCE-5133/5033: 6*USB2.0 (USB Type A*1+Rear*1, 4 on backplane)
- **USB 3.2:**
  - PCE-5133: 6*USB3.2 (Gen1) (Pin-header*6), 2*USB3.2 (Gen2) (type A, Rear I/O)
  - PCE-5033: 2*USB3.2 (Gen1) (Pin-header*2), 2*USB3.2 (Gen1) (type A, Rear I/O)
- **GPIO:** One programmable 8-bit GPIO pin-header
- **DP1 & DP2:** DVI/Displayport/HDMI via optional cable

VGA Interface

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

Ethernet Interface

- **Chipset supports:**
  - LAN 1: I225LM(PCE-5133); I226V(PCE-5033)
  - LAN 2: I225LM(PCE-5133); I226V(PCE-5033)
- **Connection:** 2 x on-board RJ-45 connectors with LED indicators.

Note: Power must be turned off before installing/uninstalling any expansion modules.

Specifications (Cont.)

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(Idle):**

Voltage	+ 3.3V	+5V	+12V
Current	8.34A	4.13A	6.86A

Note: Testing conditions:
CPU: Processor: Intel® i9-12900E
Memory: 2 DDR5 4800 32GB
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**
COM1	RS-232 (9-pin Box Header)
COM2	RS-232 (9-pin Box Header)
CPU FAN1	4-pin fan power connector for supporting PWM or DC CPU fan
DP1 & DP2	Display port/DVI/ HDMI via optional cables
eSPI	eSPI expansion pin header for COM module
HDAUD1	Advantech HD audio module expansion pin-header
JFP1	Power switch/reset connector
JFP2	External speaker/HDD LED connector/ SMBus connector
JFP3	Power LED Suspend: fast flash (ATX/AT) System on: on (ATX/AT) System off: off (ATX/AT)
JPCICLK	PCI clock selection
LAN1	Intel i225LM (PCE-5133) Intel i226V (PCE-5033)
LAN2	Intel i225LM (PCE-5133) Intel i226V (PCE-5033)
LANLED1	LAN LED
NVMe M.2	M.2 key 2280 with PCIe Gen. 4
SATA0 &1	Port 0 & 1 (PCE-5133)
SATA4~7	SATA port 4, 5, 6, 7 (PCE-5133/5033)

Jumpers and Connectors (Cont.)

SPI_TPM1	SPI expansion pin header for TPM module
Sysfan1	4 PIN fan power connector for supporting PWM or DC fan
USB2A1	USB2 port 2
USB2C1	USB2 port1
USB3C1	USB3 port1
USB3C2	USB3 port2
USB3H1	USB3 port 3,4
USB3H2	USB3 port 7, 8 (PCE-5133)
USB3H3	USB3 port 5, 6 (PCE-5133)
VGA1	VGA connector

Jumpers	
Label	**Function**
JCMOS1	CMOS clear
JME1	Clear ME data
JPCICLK1	PCI clock selection
JWDT1+ JOBS1	Watchdog timer output and OBS alarm

JPCICLK: PCI clock selection	
Closed Pins	**Result**
1-2	66 MHZ
2-3	*33 MHZ
*Default	

66 MHZ

33 MHZ

JESPI1+JESPI2: eSPI-interface COM module setting	
Closed Pins	**Result**
JFV1	VGA dummy load setting
JUSB1/ JUSB2	USB power source switch

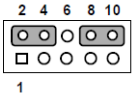
VGA dummy load setting

USB power source switch

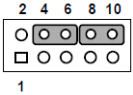
JCMOS1/JME1: Clear CMOS/ME data	
Closed Pins	**Result**
1-2	Keep CMOS/Enable ME data (Default)
2-3	Clear CMOS/Disable ME data

Jumpers and Connectors (Cont.)

JWDT1+JOBS1: Watchdog timer output and OBS alarm	
Closed Pins	**Result**
2-4, 8-10	Watchdog timer disable (2-4) OBS beep (8-10)
4-6, 8-10	*Watchdog timer reset (4-6) OBS beep (8-10)
* Default	



Watchdog timer disable (2-4)
OBS beep (8-10)



*Watchdog timer reset (4-6)
OBS beep (8-10)

JESPI1+JESPI2: eSPI-interface COM module setting	
Closed Pins	**Result**
1-2	Watchdog timer disable (2-4) OBS beep (8-10)
2-3	*Watchdog timer reset (4-6) OBS beep (8-10)
* Default	

*COM module disabled

COM module enabled

Note!

1. Do not change default settings if an eSPI-interface COM module is not installed; otherwise system will not turn on.
2. If start to use the COM module, please follow the procedures to prevent system from not to boot up: install the module after power-off, set JESPI1+JESPI2 to 2-3 pins closed, power on system to BIOS POST screen, turn off AC power, then power on.

JFV1: VGA dummy load setting	
Closed Pins	**Result**
1-2	Enable VGA dummy load
2-3	*Disable VGA dummy load
* Default	

Enable VGA dummy load

*Disable VGA dummy load

Note! It is recommended to leave this function disabled if you use DVI/DP as your main display.

Jumpers and Connectors (Cont.)

JUSB_1 & JUSB_2 (onboard USB): USB Power source switch between +5V and +5V_Dual	
Closed Pins	**Result**
1-2	*USB +5V_DUAL power
2-3	USB +5V power
* Default	

*USB +5 V_DUAL power

USB +5 V power

Software Installation

The drivers for the PCE-5133/5033 are located on the Advatech official websites. Please visit the official website for downloading.

https://support.advantech.com/support/new_default.aspx

Caution! The computer is supplied with a battery-powered real-time 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 conditons:

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

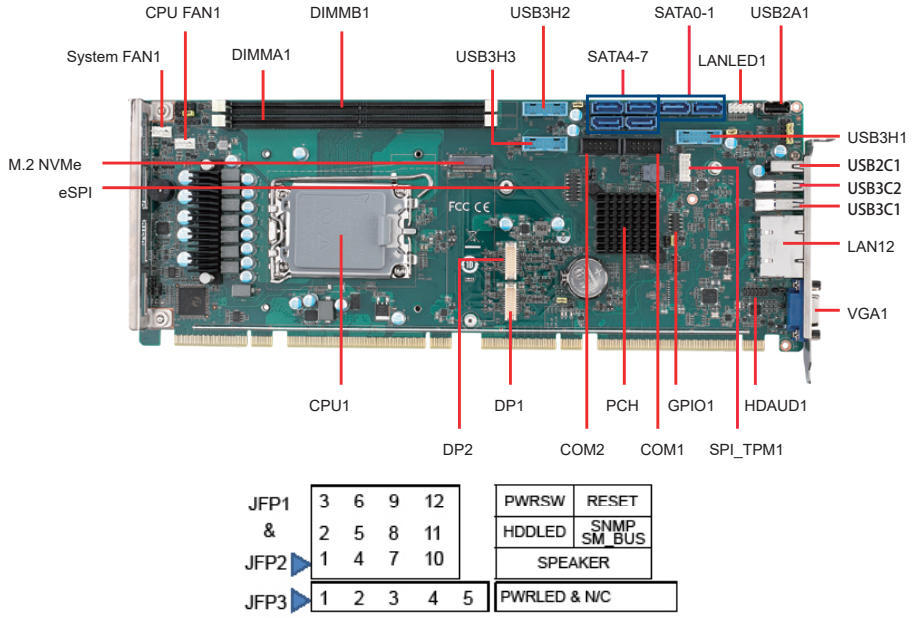


Figure 1: Board Layout: Jumper and Connector Locations

Note: *PCE-5033 supports 4 SATA ports (SATA4~7) and one internal USB3.2 pin-header.
*PCE-5033 does not feature NGFF(M.2).

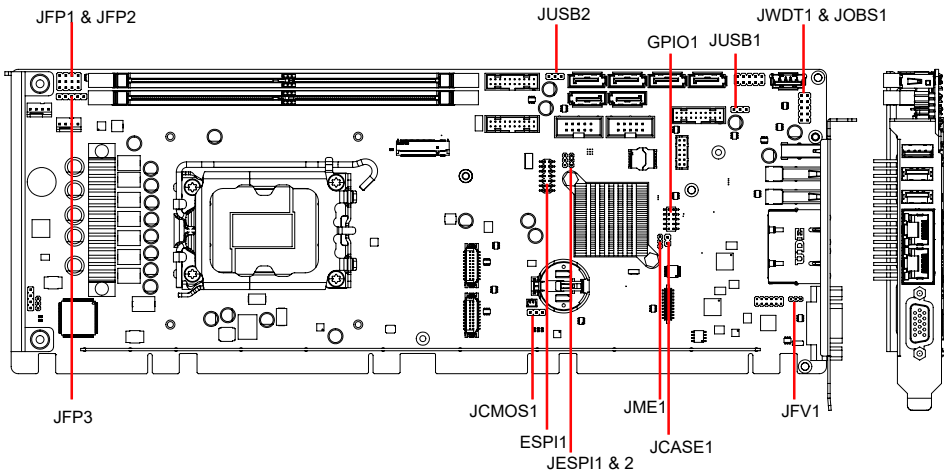


Figure 2: Board Layout - Jumpers and Connector Locations