

# PCI-7032 Intel® Atom™ J1900/N2930 CPU, PCI Half-size SBC with DDR3L 1333/Dual Independent Display/Dual GbE/SATA/USB/m-SATA/COM/LPT Startup Manual

## Packing List

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

- 1 PCI-7032 Single Board Computer
- 1 CPU Cooler only for G2 SKU P/N: 1960046526N001
- 1 PCI-7032 Startup Manual
- 1 DVD with Driver, Utility and Manual (in PDF format)
- 1 Serial ATA HDD Data Cable P/N: 1700003194
- 1 Serial ATA HDD Power Cable P/N: 1700022749-11
- 1 Printer (parallel) Port Cable Kit P/N: 1700002223
- 2 for G2 SKU & 1 for VG SKU P/N: 1700008762
  - Dual COM Ports Cable Kit
- 1 ATX Feature Cable P/N: 1700002343
- 1 4-port USB Cable Kit P/N: 1700014398-11
- 1 Y Cable for PS/2 Keyboard and PS/2 Mouse P/N: 1700060202
- 1 Jumper Pack P/N: 9689000068
- 1 Warranty Card

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

- Note1:** For detailed contents of PCI-7032, please refer to information on the enclosed CD-ROM (in PDF format). Acrobat Reader is required to view any PDF file.

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

<http://www.emacinc.com/products>

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

<http://www.emacinc.com/support/>

This manual is for the PCI-7032 series Rev. A1

Part No. 2001703200

1st Edition

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## Specifications

### Standard SBC functions

- **CPU:** Soldered-down (BGA type) Intel Atom 2.0 GHz J1900 dual-core CPU or 1.83 GHz N2930 fanless CPU
- **BIOS:** AMI SPI BIOS (64 Mb SPI)
- **System Memory:** PCI-7032 supports dual channel DDR3L 1333, up to 8GB for G2 SKU with two 204-pin SO-DIMM socket (up to 4GB/DIMM), and up to 4GB for VG SKU with one socket.
- **PCI bus:** Four 32 bit/33 MHz PCI bus masters to back-plane
- **Enhanced parallel port:** This EPP/SPP/ECP port can be configured to LPT1 or disabled. A standard DB-25 female connector provided.
- **Serial ports:** G2 SKU with four and VG SKU with two serial ports which can be configured as RS-232, RS-422 or RS-485 (with auto flow control).
- **PS/2 keyboard and mouse connector:** One 6-pin mini-DIN connector is located on the mounting bracket for easy connection to a PS/2 keyboard and mouse via the Y-cable included in the package.
- **USB port:**
  - G2 SKU: USB 3.0 \*1 (5Gbps, rear I/O), and USB 2.0\*6 (480 Mbps, pin headers)
  - VG SKU: USB 3.0\*1 (5Gbps, rear I/O), and USB 2.0\*5 (480 Mbps, 1x rear I/O, 4x pin headers)
- **LPC:** One LPC connector to support optional TPM (PCA-TPM-00A1E), COM-232 (PCA-COM232-00A1E), COM-422/485 (PCA-COM485-00A1E) modules.
- **GPIO:** Supports 8-bit GPIO from super I/O for general purpose control application.
- **Watchdog timer:** Can generate a system reset. The watchdog timer is programmable, with each unit equal to one second or one minute (255 levels).

### VGA Interface

- **Chipset:** Chipset integrated Intel® HD Graphics
- **VRAM:** Shared system memory. It subjects to the OS. Video Interface Dual independent display: choosing two interfaces from VGA (default), LVDS (default), and DVI
- **Video output:**
  - VGA: Supports up to 2560 x 1600 @ 60 Hz
  - LVDS: 48 bit (Dual channel 24 bit) LVDS up to 1920 x 1200 @ 60 Hz
  - DVI: Supports up to 2560 x 1600 @ 60 Hz
  - Dual independent display: Choosing two interface from VGA (Default), DVI and LVDS (Default)

### Ethernet Interface

- **Interface:** 10/100/1000 Mbps
- **Controller:** LAN1: Intel I211; LAN2: Intel I211(G2)
- **Connector:** RJ-45 with LED Connector x 2

## Specifications (Cont.)

### Mechanical and Environmental

- **Dimensions (L x W):** 185 x 122 mm (7.3" x 4.8")
- **Power supply voltage:** +5 V, +12 V, 5 Vsb
- **Power requirements:**

PCI-7032G2-00A1E			
Intel Celeron J1900 (2GHz), DDR3L 1333, 4GB SO-DIMM module*2			
Voltage (V)	5 V	12 V	5 VSB
Current (A)	0.737 A	0.298 A	0.044 A
Total (W)	7.481 W		

- **Operating temperature:** 0 ~ 60° C (32 ~ 140° F) (operation humidity: 40° C @85% RH, Non-Condensing)
- **Weight:**
  - G2 SKU: 0.264 Kg
  - VG SKU: 0.198 Kg

## Jumpers and Connectors

The board has a number of connectors and jumpers that allow you to configure your system to suit your application.

The table below lists the function of each of the connectors and jumpers.

Connectors	
Label	Function
LPT1	Parallel port
LAN12	Dual Gigabit Ethernet connector
VGA1	VGA connector
KBMS1, KBMS2 PS/2	Keyboard and mouse connector
KBMS2	Connects chassis front panel.
COM12, COM34(G2 SKU)	Serial port: RS-232/422/485
JFP1	Power Switch / Reset connector
JCASE1	Case Open
CPUFAN1	CPU FAN connector (4-pin)
LANLED1	LAN1/2 LED extension connector
HDAUD1	HD audio extension module connector
USB12, USB34	USB port 1-4
USB56	USB port 5, 6
USB7	USB port 7 (USB 3.0)
SATA1	Serial ATA1 (300 MB/s)
SATA2	Serial ATA2 (300 MB/s)
MSATA1	Mini-SATA
DIMMA1	Memory connector channel A
DIMMB1(G2 SKU)	Memory connector channel B

## Jumpers and Connectors (Cont.)

GPIO1	GPIO pin header
LPC1	LPC connector
ATX1	12 V, 5 V, 5VSB power connector
DVI1	DVI connector
LVDS1	LVDS connector
SMBUS1	SMBUS connector
INV1	LVDS inverter connector

**Note:** USB7 is reserved and can not be used.

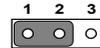
### Jumpers

Label	Function
JCMOS1	CMOS clear
ATXF1	AT/ATX mode selection
JWDT1 + JOBS1	Watchdog timer output selection and HW monitor alarm
BZ1	Buzzer setting
JLVDS1, JLVDS2	LVDS panel voltage selection
JLVDS_VCON1	LVDS VESA, JEIDA format selection

### CMOS1: CMOS clear function

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

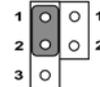
\* Default setting



### JLVDS1, JLVDS2: LVDS panel voltage selection

Closed Pins	Result
L1-L2*	3.3 V*
L2-L3	5 V
L2-R2	12 V

\* Default setting



### JLVDS\_VCON1: LVDS VESA, JEIDA Format Selection

Closed Pins	Result
1-2	Pull high to +3.3 V
2-3*	Pull down to GND*

## Jumpers and Connectors (Cont.)

### JWDT1 + JOBS1: Watchdog Timer Output Selection and HW Monitor Alarm

Closed Pins	Result
2-3*	Enable watch dog timer*
4-5*	Enable Hardware Monitor Alarm*

\* Default setting



### BZ1: Buzzer Setting

Closed Pins	Result
3-4*	Enable buzzer*
1-2	Connect external speaker

\* Default setting



### ATXF1: AT/ATX mode selection

Closed Pins	Result
Short Short Pin 1,2	AT mode*
Connect to backplane with 1700002343	ATX mode

\* Default setting



## Software Installation

The CD disc contains a driver installer program that will lead you through the installation of various device drivers needed to take full advantage of your CPU card.

**Caution!** The computer is provided 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 Advantech. Discard used batteries according to manufacturer's instructions.

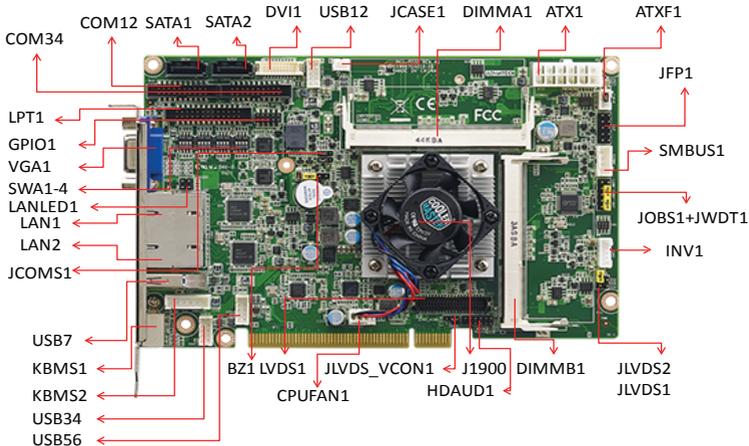


## Board Layout

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

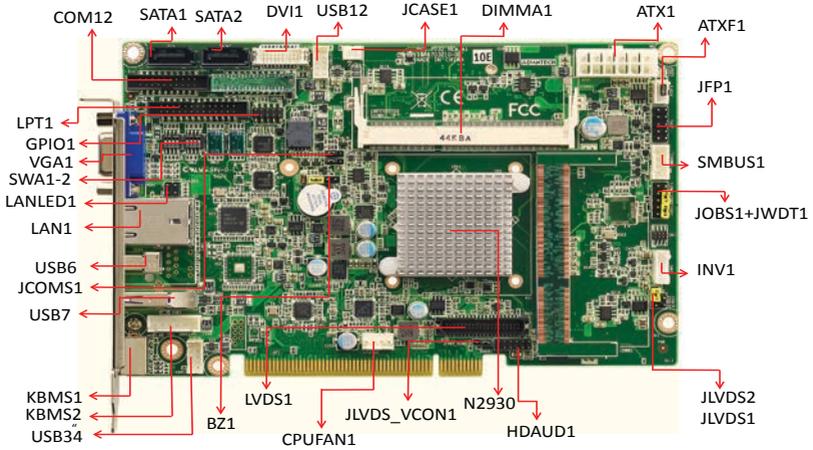
1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

The locations of all connectors and jumpers:

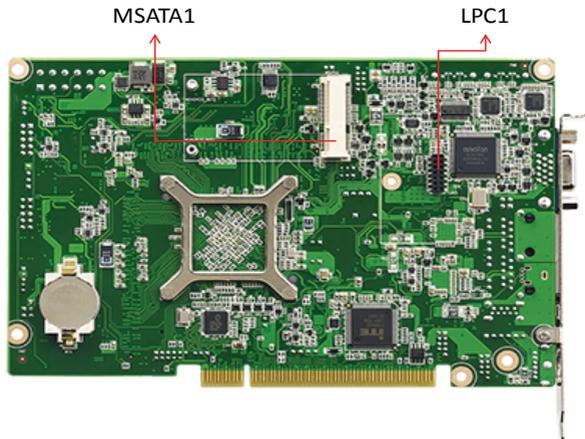


**Figure 1: Jumper and connector locations (G2 SKU)**

## Board Layout (Cont.)



*Figure 2: Jumper and connector locations (VG SKU)*



*Figure 3: Board Layout: Jumper and Connector Locations*