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PCA-6013 PICMG 1.0 Full-sized Intel® Atom N455/ D525 Processor Card with VGA/Dual Gigabit LAN Startup Manual

Packing List

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

- 1 PCA-6013 Intel® Atom N455/D525 processor-based single board computer
- 1 PCA-6013 Startup Manual
- 1 CD with driver utility and manual (in PDF format)
- 1 Ultra ATA 66/100 IDE cables p/n: 1701400452
- 1 Serial ATA HDD data cable p/n: 1700003194
- 1 Serial ATA HDD power cable p/n: 1700022749-11
- 1 Printer & COM port cable kit p/n: 1701260305
- 1 Y cable for PS/2 keyboard and PS/2 mouse p/n: 1700060202
- 1 USB cable with 4 ports p/n: 1700008461-11
- 1 Jumper pack p/n: 9689000068
- Warranty card

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

Note1: For detailed contents of PCA-6013, please refer to information on the enclosed CD-ROM (in PDF format). Acrobat Reader is required to view any PDF file.

Note2: Acrobat Reader can be downloaded at: <http://get.adobe.com/tw/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>

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

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

<http://support.advantech.com.tw/support/>

This manual is for the PCA-6013 series Rev. A1

Part No. 2006601311

2nd Edition
June 2015

Specifications

Standard SBC functions

- **CPU:** Soldered-down (BGA type) Intel® Atom™ 1.8 GHz D525 dual-core CPU or 1.66 GHz N455 fanless CPU
- **BIOS:** AMI® SPI 16 Mb Flash memory BIOS
- **Chipset:** Intel® ICH8M I/O control hub
- **System memory:** Single Channel; One 204-pin SODIMM socket accepts up to 3 GB DDR3 800 SDRAM for D525 and up to 2GB DDR3 800 for N455.
- **IDE interface:** One channel, supports two IDE devices. The IDE port may be altered to a Type II CF socket.
- **SATA interface:** Supports three SATA2 HDDs (300 MB/s)
- **Serial ports:** Two serial RS-232 ports
- **Parallel port:** One EPP/ECP parallel port
- **Keyboard/mouse connector:** One standard PS/2 keyboard/mouse connector and one external 6-pin header.
- **Watchdog timer:** 255 level timer intervals
- **USB (2.0):** 8 Universal Serial Bus ports on board for VG SKU; 8 ports on board and 1 port on I/O bracket for G2 SKU.

VGA Interface

- **Controller:** Embedded Gen3.5+ GFX Core technology
- **Display memory:** Shared with 224 MB system memory
- **Video Output:**
 - VGA: Supports up to SXGA 1400 x 1050 @ 60 Hz for Atom™N455, up to 2048 x 1536 @ 60 Hz for Atom™ D525
 - Optional LVDS: Supports 18-bit single channel and up to WXGA 1366 x 768 or 1280 x 800

Ethernet Interface

- **Chipset:** LAN1: Intel® 82567V; LAN2: Intel® 82583V
- **Connection:** Onboard RJ-45 connector

Mechanical and Environmental

- **Dimensions (L x W):** 338 x 122 mm (13.3" x 4.8")
- **Power supply voltage:** +5 V, +12 V
- **Power requirements:**
 - Configuration 1:**
 - CPU: Intel® Atom™ D525 CPU 1.8 GHz
 - Memory: 1 DDR3 800MHz 2GB DIMM and 1GB on board
 - Test program: Intel Max power 100% + BurnIn Test 4.0 +5 V @ 3 A, +12 V @ 0.44 A, +3.3 V @ 0 A, +5 VSB @ 0.15 A, -12 V @ 0 A, -5 V @ 0 A
 - Configuration 2:**
 - CPU: Intel® Atom™ N455 CPU 1.66 GHz
 - Memory: 1 DDR3 800MHz 1GB DIMM and 1GB on board
 - Test program: Intel Max power 100% + BurnIn Test 4.0 +5 V @ 2.1 A, +12 V @ 0.16 A, +3.3 V @ 0 A, +5 VSB @ 0.13 A, -12 V @ 0 A, -5 V @ 0 A
- **Operating temperature:** 0 ~ 60° C
- **Weight:** 0.5 kg (net weight)

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
IDE1	IDE connector
FDD1	Floppy drive connector
LPT1	Parallel port
VGA1	VGA connector
COM12	RS232 serial ports connector
KBMS1	PS/2 keyboard and mouse connector
KBMS2	External keyboard/mouse connector
JIR1	Infrared connector
JOBS1	HW Monitor Alarm Close: Enable OBS Alarm Open: Disable OBS Alarm
CPUFAN1	CPU FAN connector
JFP1	Power and Reset Button connector
JFP2	HDD LED/Speaker connector
JFP3	Power LED and keyboard lock connector
LAN1	LAN RJ45 connector
LAN2	LAN RJ45 connector (only for G2 SKU)
LANLED1	LAN LED connector
HDAUD1	HD Audio connector
SATA1	Serial ATA1
SATA2	Serial ATA2
SATA3	Serial ATA3
USB12	Two USB port pin headers
USB34	Two USB port pin headers
USB56	Two USB port pin headers
USB78	Two USB port pin headers
USB9	One USB port on I/O bracket (only for G2 SKU)
DIMM1	Memory connector channel A
LPC1	Low pin count connector
JCASE1	Case open
ATXF1	ATX power connector
GPIO1	GPIO connector
SMBUS1	SMBUS connector
CF1	CF socket (only for G2 SKU)

Jumpers

Label	Function
CMOS1	CMOS clear
JWDT1	Watchdog timer output selection
JLVDS1	3.3 V / 5 V, LVDS voltage selection
JVBR1	LVDS backlight setting

CMOS1: CMOS clear function

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

* default setting



JWDT1: Watchdog timer output option

Closed Pins	Result
1-2	IRQ11
2-3	System reset *

* 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.

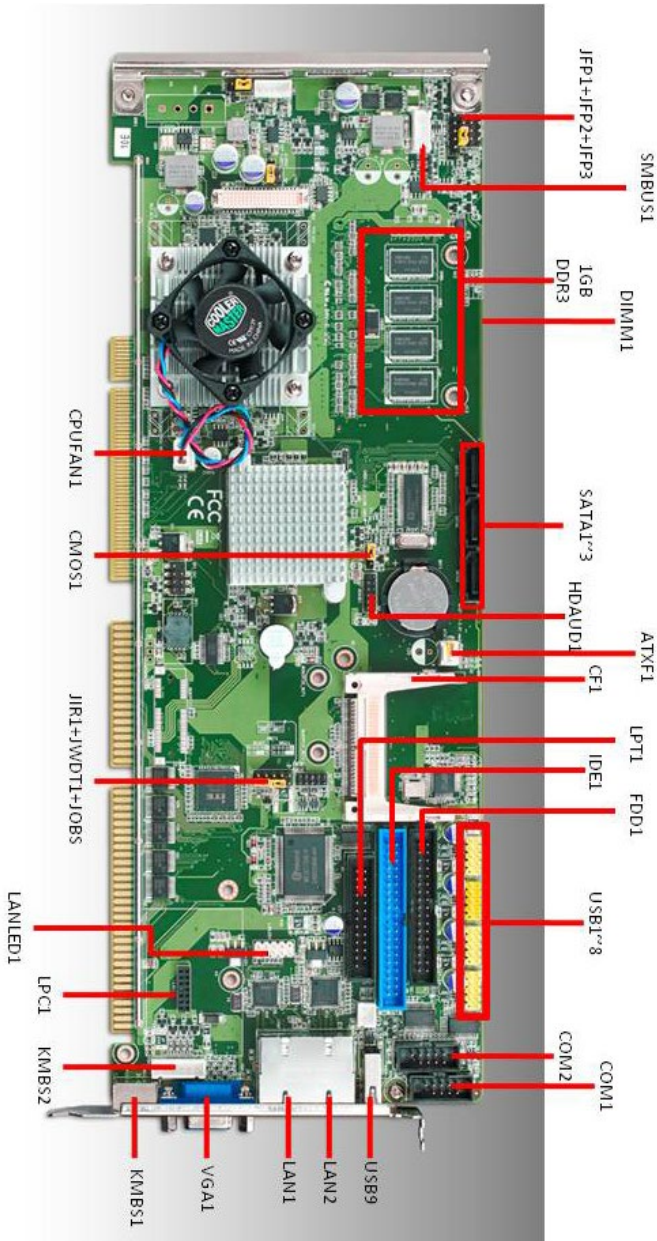
Safety Information

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

The locations of all connectors and jumpers:



Board Layout: Jumper and Connector Location