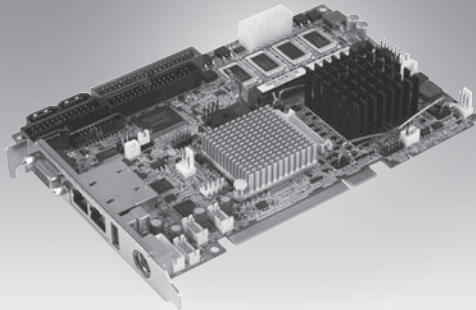


# PCI-7031

Intel® Atom N450/D510, PCI Half-Sized SBC with On-board DDR2/VGA/LVDS/Dual GbE/SATA/COM

Preliminary



CE FCC

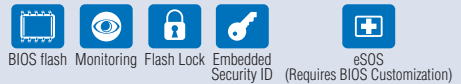
## Features

- Ultra low power, fan-less N450 CPU and 1 GB on-board DDR2 667 memory (Only for N SKU)
- Dual core high performance D510 CPU and maximum 2 GB DDR2 667 memory (Only for D SKU)
- VGA/LVDS dual video outputs
- Optional module for 4 x RS-485 w/ auto-flow control
- Supports embedded software APIs and Utilities

### Software APIs:



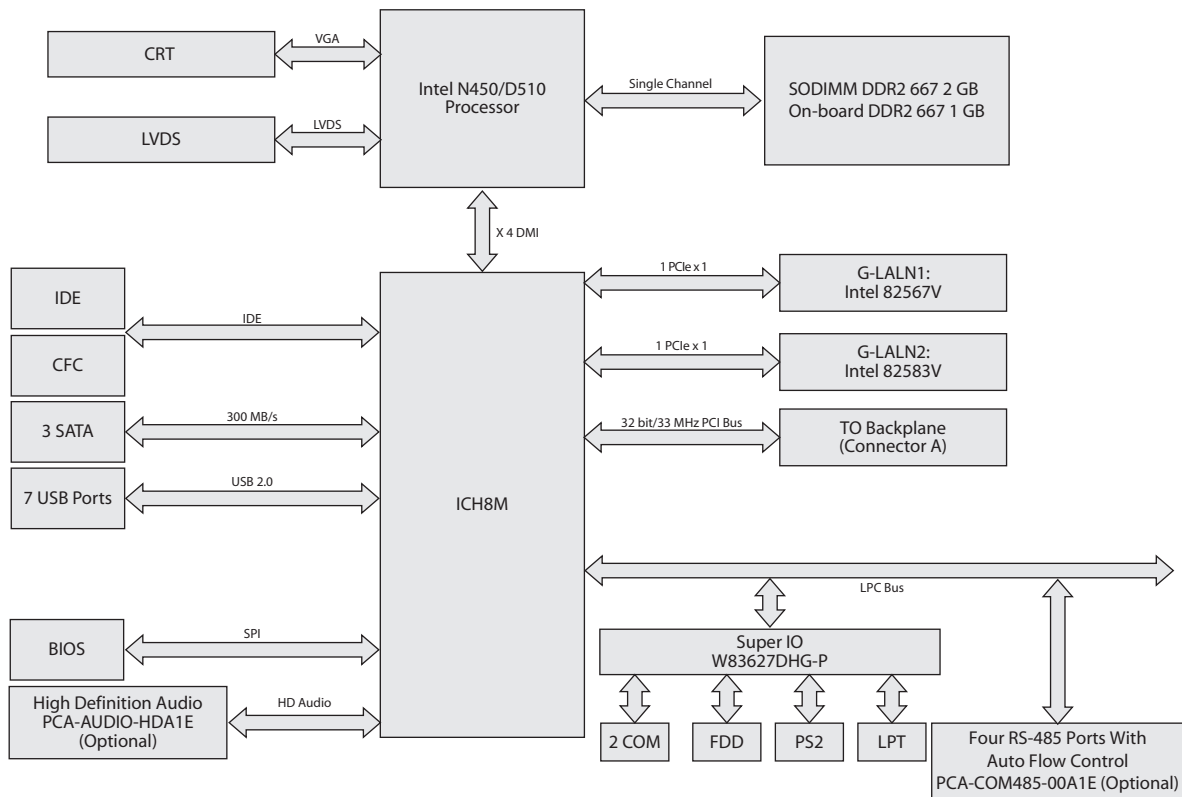
### Utilities:



## Specifications

|                   |                    |   |                 |        |         |       |   |          |
|-------------------|--------------------|---|-----------------|--------|---------|-------|---|----------|
| Processor System  | CPU                | Intel Atom N450   | Intel Atom D510 |        |         |       |   |          |
|                   | Speed              | 1.66 GHz  | 1.66 GHz        |        |         |       |   |          |
|                   | L2 Cache           | 512 KB  | 1 MB            |        |         |       |   |          |
|                   | Chipset            | ICH8M   |                 |        |         |       |   |          |
|                   | BIOS               | AMI 16Mb SPI Flash  |                 |        |         |       |   |          |
| Bus               | PCI-Express        | N/A   |                 |        |         |       |   |          |
|                   | PCI                | Four 32 bit/33 MHz PCI Masters to Backplane   |                 |        |         |       |   |          |
| Memory            | Technology         | Single channel DDR2 667 MHz   |                 |        |         |       |   |          |
|                   | Max. Cap.          | 1 GB on-board for N SKU; max 2 GB SODIMM for D SKU  |                 |        |         |       |   |          |
|                   | Socket             | No socket for N SKU; 200-pin DIMM x 1 for D SKU   |                 |        |         |       |   |          |
| Graphic           | On board VRAM      | Embedded Gen3.5+ GFX Core technology, Direct X 9/Pixel Shader 2.0 compliant   |                 |        |         |       |   |          |
|                   | Video Intercae     | Shared 224 MB   |                 |        |         |       |   |          |
|                   | Video Output       | 15 pin VGA D-sub connector x1/On-board LVDS pin header x 1 (supports single channel 18-bit LVDS)  |                 |        |         |       |   |          |
|                   | Video Output       | VGA: Supports up to SXGA 1400 x 1050 @ 60 Hz for N SKU, up to 2048 x 1536 @ 60 Hz for D SKU<br>LVDS: Supports 18-bit single channel and up to WXGA 1366 x 768 or 1280 x 800 for both N and D SKUs<br>Dual Display: CRT + LVDS, support extended mode and clone mode for both N and D SKUs |                 |        |         |       |   |          |
| Ethernet          | Interface          | 10/100/1000Base-T   |                 |        |         |       |   |          |
|                   | Controller         | LAN1: Intel 82567V<br>LAN2: Intel 82583V  |                 |        |         |       |   |          |
|                   | Connector          | RJ45 with LED Connector x 2   |                 |        |         |       |   |          |
| SATA 2            | Max. transfer rate | 300MB/s   |                 |        |         |       |   |          |
| EIDE              | Channel            | 3   |                 |        |         |       |   |          |
|                   | Mode               | ATA 100/66/33   |                 |        |         |       |   |          |
| I/O Interface     | Channel            | 1 (support up to 2 IDE devices)   |                 |        |         |       |   |          |
|                   | USB 2.0            | 7 ports on the SHB  |                 |        |         |       |   |          |
|                   | Serial             | Two RS-232 on-board pin-headers, plus four ports of RS-485 with auto-flow control by module (Advantech P/N: PCA-COM485-00A1E)   |                 |        |         |       |   |          |
|                   | Parallel           | 1 (EPP/ECP)   |                 |        |         |       |   |          |
|                   | FDD                | 1   |                 |        |         |       |   |          |
| Watchdog Timer    | PS/2               | 1 (for mouse and keyboard, an Y cable is included in the package)   |                 |        |         |       |   |          |
|                   | Output             | System reset  |                 |        |         |       |   |          |
|                   | Interval           | Programmable 1, 2, 4, 8, ..., 256 sec/min   |                 |        |         |       |   |          |
| Miscellaneous     | Audio Output       | Intel High Definition audio interface (requires an audio extension module, P/N: PCA-AUDIO-HDA1E)  |                 |        |         |       |   |          |
| Power Requirement | Test Equipment     | Atom D510 CPU 1.66 GHz; Memory: 1 Piece of 2 GB DDR2 667 MHz SODIMM; Storage: One IDE HDD and one SATA CD ROM   |                 |        |         |       |   |          |
|                   | Test program       | BurnIn test 6.0   |                 |        |         |       |   |          |
|                   | Voltage            | +12 V   | +5 V            | +3.3 V | +5 SBY  | -12 V | -5 V  | Total    |
|                   | Current            | 0.228 A   | 2.952 A         | 0 A    | 0.060 A | 0 A   | 0 A   | 17.796 W |
|                   | Test Equipment     | Atom N450 CPU 1.66 GHz; Memory: On-board 1GB DDR2 667 MHz; Storage: One IDE HDD and one SATA CD ROM   |                 |        |         |       |   |          |
|                   | Test program       | BurnIn test 6.0   |                 |        |         |       |   |          |
|                   | Voltage            | +12 V   | +5 V            | +3.3 V | +5 SBY  | -12 V | -5 V  | Total    |
|                   | Current            | 0.192 A   | 2.532 A         | 0 A    | 0.060 A | 0 A   | 0 A   | 15.264 W |
| Environment       | Status             | Operating   | Non-Operating   |        |         |       |   |          |
|                   | Temperature        | 0 ~ 60° C (32 ~ 140° F) (operation humidity: 40° C @ 85% RH Non-Condensing)   |                 |        |         |       | -40 ~ 85° C and 60° C @ 95% RH Non-Condensing |          |
| Physical          | Dimensions         | 185 mm (L) x 122 mm (W) (7.3" x 4.8")   |                 |        |         |       |   |          |

## Board Diagram



## Ordering Information

| Model Name      | CPU       | Memory  | Fan-less | VGA | LVDS | SATA | USB | COM | CF  |
|-----------------|-----------|---|----------|-----|------|------|-----|-----|-----|
| PCI-7031D-S6A1E | Atom D510 | 1 SODIMM Socket 2 GB<br>DDR2 667<br>On-board 0 GB | No       | Yes | Yes  | 3    | 7   | 2   | Yes |
| PCI-7031N-S6A1E | Atom N450 | No SODIMM Socket<br>On-board 1 GB DDR2 667        | Yes      | Yes | Yes  | 3    | 7   | 2   | Yes |

## Accessories

| Part Number      | Description   |
|------------------|---|
| PCA-COM485-00A1E | Extension module for four ports of RS-422/485 with auto-flow control function |
| PCA-AUDIO-HDA1E  | Extension module for 7.1 channel High Definition audio                        |

## Bracket View



PCI-7031D-S6A1E  
PCI-7031N-S6A1E

## Packing List

| Part Number   | Description   | Quantity |
|---------------|---|----------|
| 960046526N001 | CPU Cooler for Atom D510 CPU (Only Available for D SKU) | 1        |
| 1700340640    | FDD cable   | 1        |
| 1701400452    | Ultra ATA 66/100 HDD cables                             | 1        |
| 1700003194    | Serial ATA HDD data cable                               | 2        |
| 1703150102    | Serial ATA HDD power cable                              | 2        |
| 1701260301    | Printer (parallel) port cable kit                       | 1        |
| 1700008762    | Dual COM ports cable kit                                | 1        |
| 1700002343    | ATX Feature Cable                                       | 1        |
| 1700008887    | 4-port USB cable kit                                    | 1        |
| 1700060202    | Y cable for PS/2 keyboard and PS/2 mouse                | 1        |
| 1700000265    | AT/ATX PSU 20-Pin to 12-Pin Cable Kit                   | 1        |
| 9689000068    | Jumper Pack   | 1        |
|               | Warranty card   | 1        |
|               | PCI-7031 Startup Manual                                 | 1        |
|               | CD with driver utility and manual (in PDF format)       | 1        |