PowerBrick
ATOM 5.0

Quick Manual

Small footprint rugged **Intel® ATOM™**

Industrial Computer

1. Overview

The PowerBrick - ATOM 5.0 is an *Intel® Atom™ dual core* D2550 with 1.86 GHz processor speed. This small, rugged and powerful computer is the premium choice when desktop computer performance is required in industrial computing applications. Small size does not necessarily mean limitations in computing power.
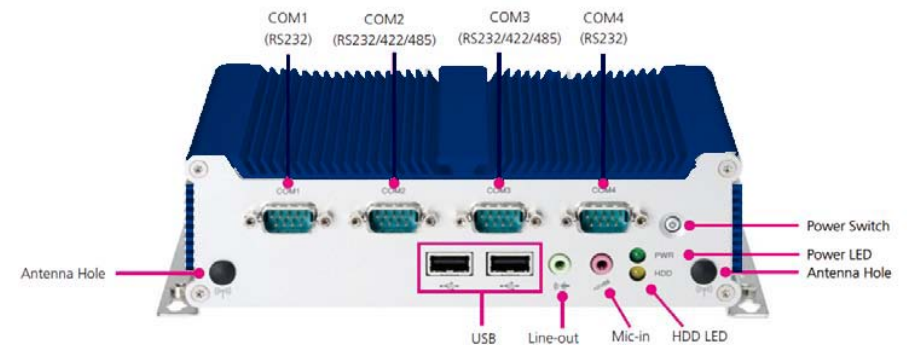
The state-of-the-art PowerBrick - ATOM 5.0 comes loaded with an impressive video card, fast hard drive (optionally SSD HDD drive) and memory, all at a competitive price. It is designed and built for great performance in a variety of applications and environments. The design focuses on elements essential for industrial use wile excluding unneccesary hardware. The architecture is modular which allows for easy upgrading and expansions.

Areas of applications include:

- Oil-rigs/Gas/Mining vehicles
- Security and patrol vehicles even helicopters
- Emergency (EMS) or public safety vehicles
- Seaport terminal container yard management
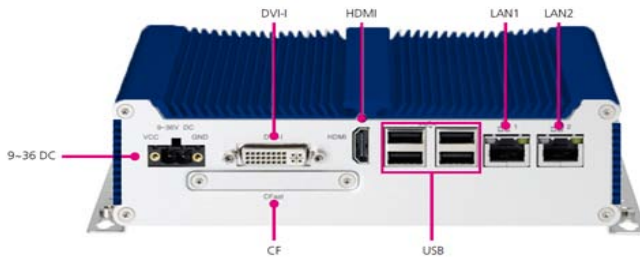- Fleet management

The main features are:

Figure 1.1: Front side of PowerBrick ATOM 5.0

- On-board Intel® Atom™ Dual Core D2550 processor, 1.86 GHz
- Intel® NM10 Express chipset
- 1x DDR3 SO-DIMM sockets, support up to 4G DDR3-800/1066 SDRAM, un-buffered and non-ECC
- 6x USB2.0 (2x front side and 4x back side)
- 4x COM (2x RS232/422/485 Com2,3 and 2x RS232 Com1,4)

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- 1x mini-PCIe with two antenna holes (Optional)
- Audio jack   Line-out and Mic in
- Power Switch   Press to power-on or power-off the system.
- Power Status LED   Indicates the system's power status.
- HDD Activity LED   Indicates the hard drive's activity.

Figure 1.2 : Back side of PowerBrick ATOM 5.0

- 1x DVI-I output (If need VGA output, please use DVI to VGA Adaptor)
- 1x HDMI display output
- Dual Intel® 82574L GbE LAN ports
- 1x external CFast socket **u**sed to insert a Compact Flash card (optional)
- Support 9-36V DC input used to plug a DC power cord
- Supports ATX power mode, WoL, LAN teaming and PXE function
- 185mm(W) x 131mm(D) x 54mm(H) (7.28"x 5.2"x 2.13")

2. Installation

2.1 Contents of the Computer Box

PowerBrick ATOM5.0   DVI to VGA Adaptor   AC to DC Adaptor   Power Cable
                                                                                  (Optional)   (Optional)

Figure 2.1 Box major components

In the box you will find the following items:

PowerBrick ATOM 5.0 computer, DVI to VGA adaptor, AC to DC adaptor, power cable, manual and drivers CD.

If you have purchased Windows operating system with your computer, these CD's should be included. Keep them in a safe place.

Do not turn power on until you have read the next section and all cables are connected.

Optional device cables or units that you provide yourself could include the following:

- USB cable
- Speaker and microphone cables
- RJ45 Ethernet TP cable
- RS232 Serial port cable

2.2 Mounting in your vehicle or final location

Prior to that, please prepare the installation tools and appropriate items. If you are not clear about the items, contact your dealer for information.

2.3 Mounting tools

For mounting your computer in a vehicle you need the following tools:

- Wrenches (as required)
- Star (Philips #2) Screw driver
- Drill (3mm or 1/8") Check behind surface before drilling!
- Bolts and nuts appropriate to mount the plate in your vehicle

2.4 Computer installation

Mounting screws or bolts and nuts for mounting to your specific vehicle are not provided, as there are many variations of thickness that the unit might be mounted to. If mounting in a vehicle that is subject to vibration and shock, It Is important to use the mounting plate with attached shock absorbers where vibration could occur. The mounting plate should be fastened tightly with bolts and nuts. Please ensure that if you mount any bolts/nuts under the computer, that they do not touch the computer itself. Otherwise, the shock absorbers will not protect the computer properly.

Figure 2.2 Mounting plate

Connect all final wiring in a neat way, fastening it down with tie straps or other means to ensure that it does not get caught and broken accidentally. Your car electrician will know appropriate ways to do this.

3. Technical Information

3.1 BIOS Setup

The single board computer uses the AMI BIOS (Basic Input/Output System) for the system configuration. The AMI BIOS in the single board computer is a customized version of the industrial standard BIOS for IBM PC AT-compatible computers. It supports Intel x86 and compatible CPU architecture based processors and computers. The BIOS provides critical low-level support for the system central processing, memory and I/O sub-systems. The BIOS setup program of the single board computer let the customers modify the basic configuration setting. The settings are stored in a dedicated battery-backed memory, NVRAM, retains the information when the power is turned off. If the battery runs out of the power, then the settings of BIOS will come back to the default setting. The BIOS section of the manual is subject to change without notice and is provided here for reference purpose only. The settings and configurations of the BIOS are current at the time of print, and therefore they may not be exactly the same as that displayed on your screen. To activate CMOS Setup program, press <F2> key immediately after you turn on the system. The following message "Press F2 to enter SETUP" should appear in the lower left hand corner of your screen. When you enter the CMOS Setup Utility, the Main Menu will be displayed as in Table 3.1. You can use arrow keys to select your function, press <Enter> key to accept selection and enter the sub-menu.

Table 3.1: AMI BIOS CMOS Setup Utility

3.2 Operating Systems

The PowerBrick ATOM5.0 will generally be provided with a preinstalled operating system such as Windows 7 Professional or Embedded . To restore the operating system, you can use an external CD-ROM drive to change, reinstall or repair the operating system through a USB 2.0 port.

3.3 Application Software

You should be able to run all normal/generic application software such as Microsoft Word, Excel, PowerPoint, Adobe software etc. if you have Windows installed. See the relevant manual/help guides for the specific software. For Linux you will have to specifically select software designed for Linux. Acura is not responsible for failure of any software on your computer but if you have any particular software needs, please call Acura Technical Support or email support@acuraembedded.com.

3.4 Operation and maintenance

This module requires no routine maintenance. The blue LED indicator when lit indicates proper operation and health.

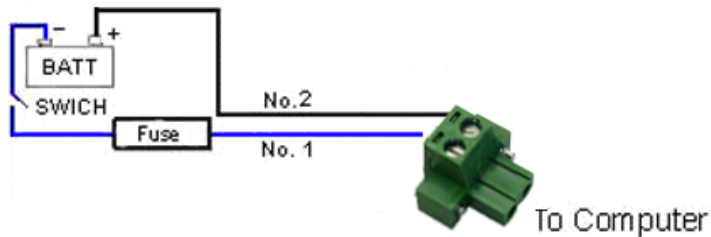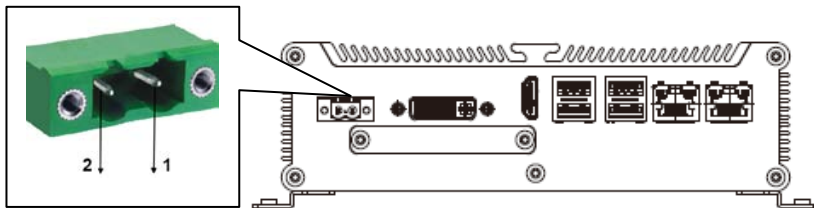The power supply must be protected by a **7A** auto fuse on the input line from the vehicle battery.

Before power up the computer, make sure all cables connected to the computer and the monitor.

WARNING

First hookup all cables then turn on computer powerSwitch.

Make sure monitor power led on or blinking .

3.5 PowerBrick ATOM 5.0 Wiring Diagram

Computer connector :

pin1-Ground
pin2-DC+ 9~36V

With the unique set of products, Acura Embedded Systems Inc. remains committed to its goal of providing trouble-free and customer-friendly service. A special customer service unit has been set up specifically to cater to our esteemed customers' needs.

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