TB191 (Rev1) - Installing An Aaeon PCM-6893 In An M400

Overview

This document describes the procedure for installing the Aaeon PCM-6893 motherboard in an M400 console. This motherboard is a replacement in systems that have an industrial motherboard and an NEC 10.4" LCD screen. If you have an NEC 9.4" Color LCD screen, you will need a different LCD cable. Below you will find a list of all the components that you should have received with the Aaeon motherboard.

* Aaeon PCM-6893 Motherboard, complete with CPU and memory
* Heat sink, fan w/ mounting bracket and 2 sets of ¾" and ¼" standoffs
* LCD Cable
* ATX Power Supply
* Aaeon Hard Drive cable and Floppy cable
* Aaeon Keyboard and mouse cables
* Serial and Parallel cables
* Ethernet Cable
* Misc. power extension cables
* SSHDD with Linux installed
* Aaeon PS/2 to M400 keyboard adaptor cable
* Fan/inverter cable
* LCD Cable Mounting Plate
* USB cable with 1 USB extension
* KBCNTRL2 020829

Installation

The first step in the installation process is to remove all of the old components. You must remove the old motherboard assembly, complete with CPU, memory and heatsink. You must also remove the old LCD descrambler card and LCD cable. You will no longer need the existing Ethernet cable, keyboard/mouse cable, or hard drive cable and floppy cable. If the power supply is not of the ATX type or a Morex PS, then you will also need to remove it. This document contains the recommended installation procedure. Follow it exactly to avoid any problems. If there is any confusion over any of the instructions, please refer to picture 1 (pic. 1 shows each of the cables, and their labels). Picture 2, shows proper installation of fan and bracket, and picture 3 shows an Aaeon installed in M400 console.

1. Install the Aaeon motherboard in the M400, on the existing motherboard standoffs. The standoffs must be 1" or the fan assembly will not install correctly.
2. Attach the new LCD Cable to CN3 on the motherboard and the other end to the LCD screen using the existing screws, standoffs, and LCD Cable Mounting Bracket. The cable is keyed so, it can only be plugged in one way. The mounting bracket goes over the LCD Connector to hold in place on the LCD.
3. Attach the Hard Drive cable to IDE1 on the motherboard and the other end to the new flash card reader. This cable should be keyed. If not the red stripe goes to Pin 1, which is towards the CPU Socket. Note: If using the flash card reader supplied by Centroid, verify JP4 has the two pins closest to the IDE connector jumpered.
4. Attach the floppy drive cable to FDC1 on the motherboard (pin one closest to the standoff) and the other end to the floppy drive.
5. Attach the serial cable to CN6 on the motherboard. This socket is keyed and can only go on one way.
6. Attach the LPT1 cable to LPT1 on the motherboard. This socket is keyed and can only go one way.
7. Attach the USB cable to USB2 on the motherboard. Pin 1 is labeled with an arrow and is the Red wire on the USB cable.
8. Connect new Ethernet cable to LAN1 on the motherboard.
9. Plug ATX power connector into PWR1. It will only plug in one way.
10. Connect the new keyboard/mouse cable to CN7. It will only connect one way. The keyboard cable plugs into the 4

pin connector on the back of the M400 Keyboard. The Keyboard Control Board will need to be replaced with KBCNTRL2 020829. The older KBCNTRL2 981202 will not work correctly with the Aaeon PCM-6893.

11. After all cables are installed you will carefully need to route all the cables so that they do not obstruct the CPU7. The LCD cable can be routed by the fan as shown in Picture 2. Extra care must be taken with the ATX power connector so that is does not interfere with the bottom of the CPU7 card. A picture of an Aaeon installed in an M400, with the cables routed as suggested can be seen in picture 3.

12. If the M400 was not fitted with an ATX style power supply, then you will have to drill new mounting holes for the new ATX power supply. When you mount it be sure that it will not obstruct any fans or vents on the back, and that the back panel will mount up squarely.

FRONT

2.625"

BOTTOM

1.75"

1.125"

BACK
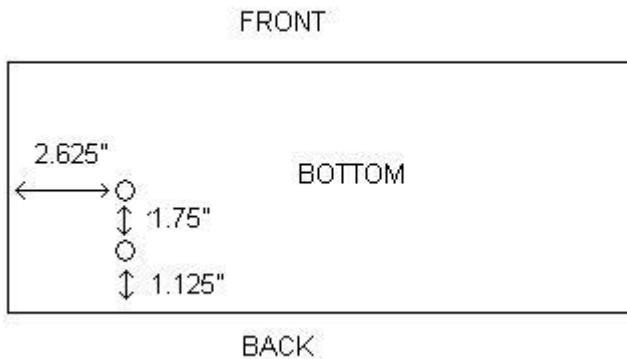
13. Use the 3/4" standoffs instead of the 1" standoffs on the side of the motherboard closest to the bottom of the console. Then mount the bracket and fan on these standoffs with the fan pointing down towards the front panel of the console. Now place a set of 1/16" spacers on top of the bracket and secure the bracket by installing the ¼" standoffs. (See Picture 2)

14. Re-install the CPU7; you may need to use 1/16" spacers on the top and bottom of the 1" standoffs used at the topside of the motherboard.

15. After powering on the M400, you may need to go into the CMOS setup to change some settings. To do this, hit the DEL key on the keyboard when the control does the Memory check. Go into STANDARD CMOS SETUP. Change the Screen Resolution to 640x480 TT1. You must change the HALT option to ALL, BUT KEYBOARD. Go in to the Power Management Setup and change PWRON after PWR-Fail to ON.

Note: If the motherboard was not setup at Centroid you may need to momentarily jumper pins 1 & 2 on CN9 while power is applied to the motherboard. The motherboard will turn on and allow you to enter the BIOS. You must change the power management as described above.

Picture 1. Aaeon with cables inserted correctly:
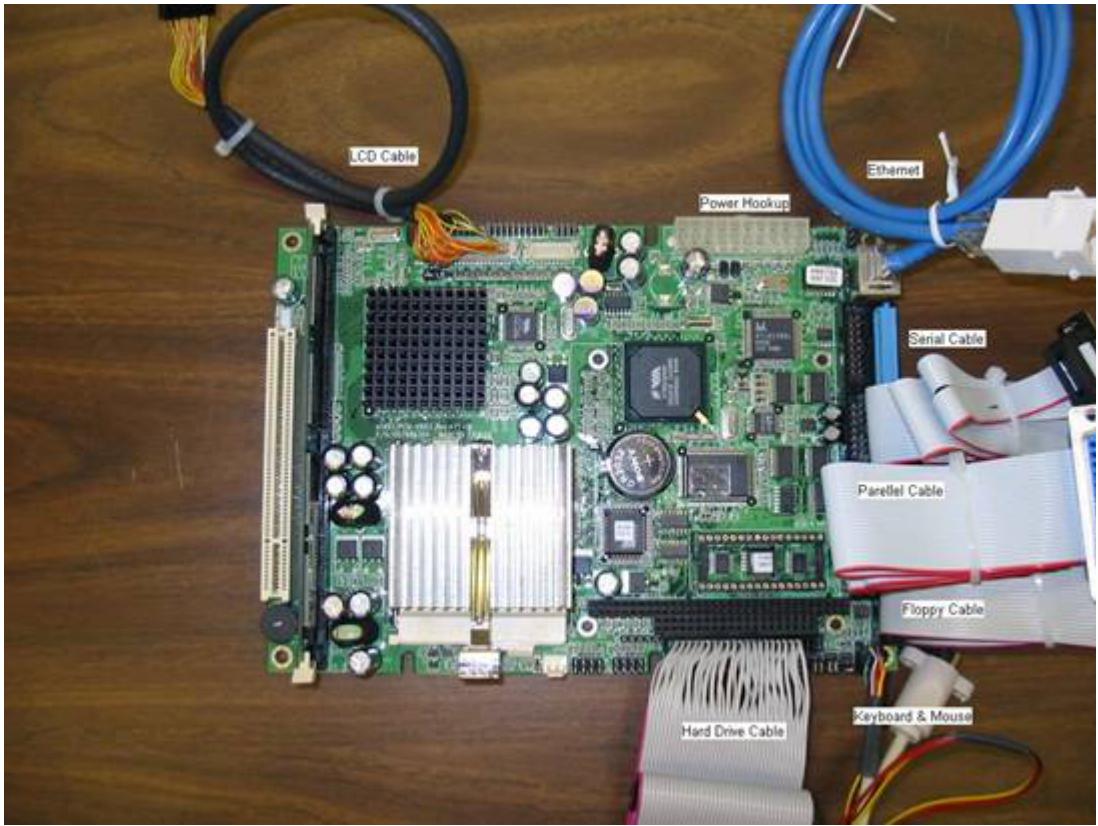
Picture 2. Correct installation of fan and bracket on the motherboard.
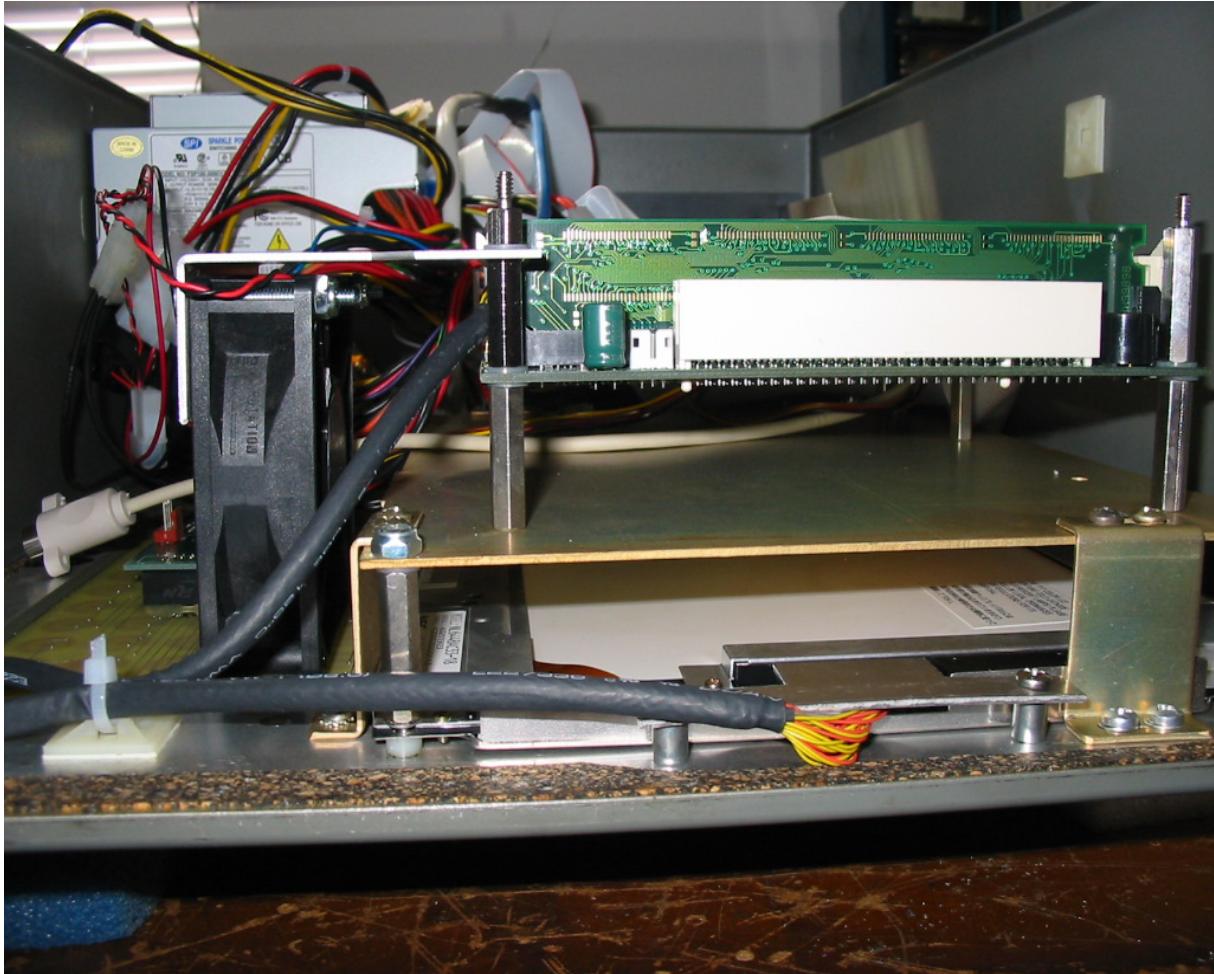
Picture 3. Aaeon motherboard installed in an M400

Notes:

* Check that the CPU7 has enough clearance above all the cables on the motherboard, especially the ATX power cable.
* If the CPU7 is not inserted all the way into the socket on the motherboard, then you may get a 64180 Timeout not responding error message.

Connectors

Label	Function
CN1	TV Output Connector
CN2	LAN1 Status Connector
CN3	Primary LCD Panel Connector
CN4	Secondary LCD Panel Connector
CN5	Audio Output Connector
CN6	Serial Port 1 / 2 / 3 / 4 Connector
CN7	Keyboard / PS2 Mouse Connector
CN8	GPIO Connector
CN9	Front Panel Connector
VGA1	CRT Connector
LVDS1	LVDS Connector
LVDS2	LVDS Connector
LAN1	10/100 Base-Tx Ethernet 1 Connector
IDE1	Primary Device Connector
CF1	Compact Flash Connector
PWR1	ATX Power Connector
PWR2	AT Power connector
FAN1	CPU Fan Connector
LPT1	Printer Port Connector
SOLT1	PC/104 Connector
WOL1	Wake On LAN Connector
FDC1	Floppy Connector

Locating connectors and jumpers (component side)
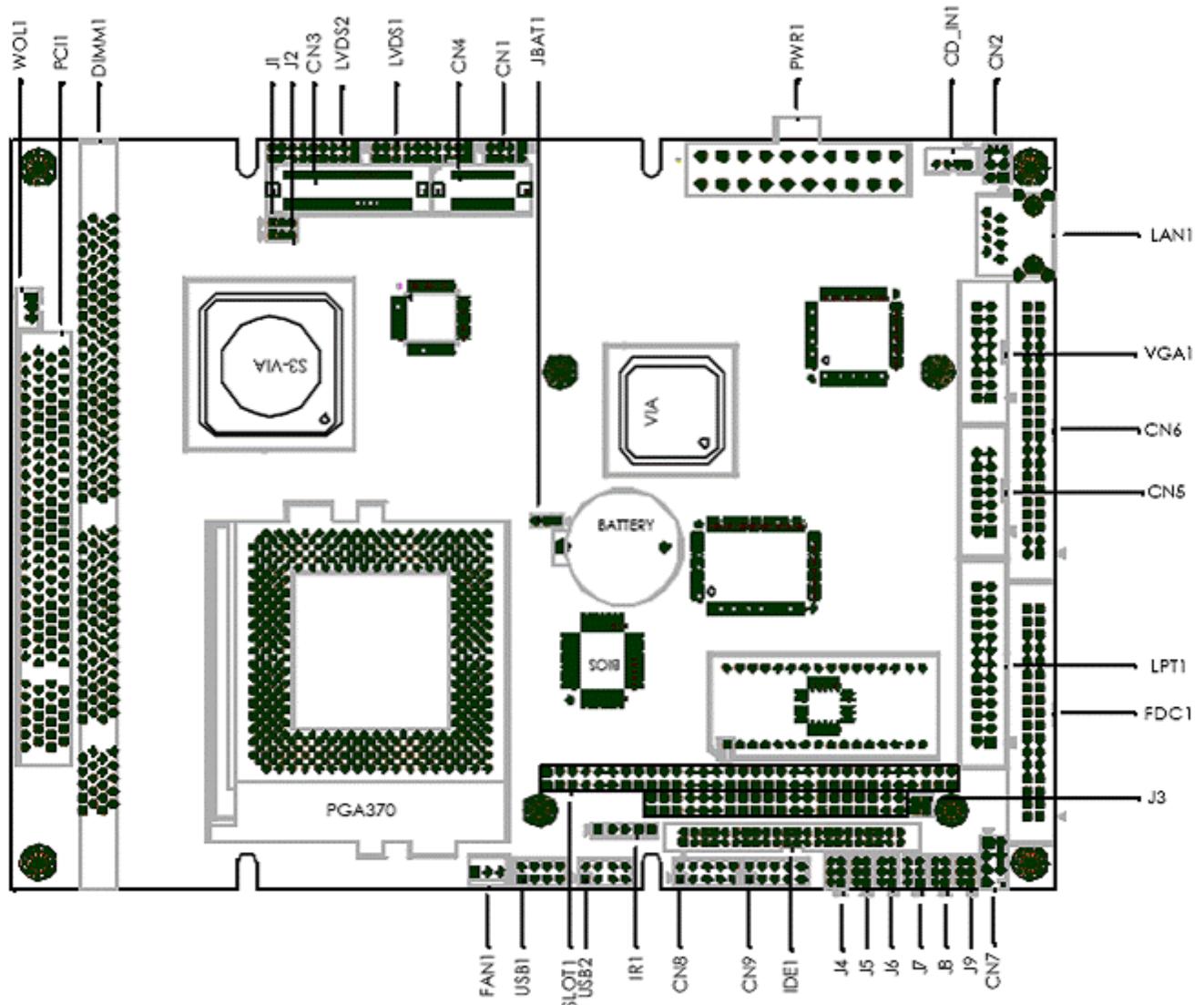
Document History

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