TB147 (Rev1) - Installing An Aaeon PCM-6890B In An M400

Overview

This document describes the procedure for installing the Aaeon PCM-6890B motherboard in an M400 console. This motherboard is a replacement in systems that have an Acrosser motherboard and an NEC 10.4" LCD screen. Below you will find a list of all the components that you should have received with the Aaeon motherboard.

1. Aaeon PCM-6890B Motherboard, complete with CPU and memory
2. Heat sink, fan w/ mounting bracket and 2 sets of 3/4" and 1/4" standoffs
3. LCD descrambler card LCD_DES 020703, 50 Pin
4. 50 pin LCD cable
5. ATX Power Supply
6. Aaeon Hard Drive cable
7. Aaeon Keyboard and mouse cables
8. Ethernet Cable
9. Misc. power extension cables

Also you will need to retain the following parts from the M400 for use with the Aaeon motherboard:

1. Floppy Drive cable
2. LPT1 cable
3. Serial cable
4. ATX power supply, if fitted

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, mouse cable, keyboard cable or hard drive cable. If the power supply is not of the ATX type, 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 of an Aaeon (pic. 1, shows each of the cables, their labels as well as the connection of pin 1.). 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
2. Attach the new 50-pin LCD descrambler card to the LCD screen using the existing screws and standoffs. It is important that you use the new LCD descrambler card, failure to do so will damage both the motherboard and LCD
3. Install the LCD cable; one end connects to the descrambler card, and the other to CN10 on the motherboard. It is vital that the red stripe on the cable is attached to Pin 1 at each end. On the motherboard
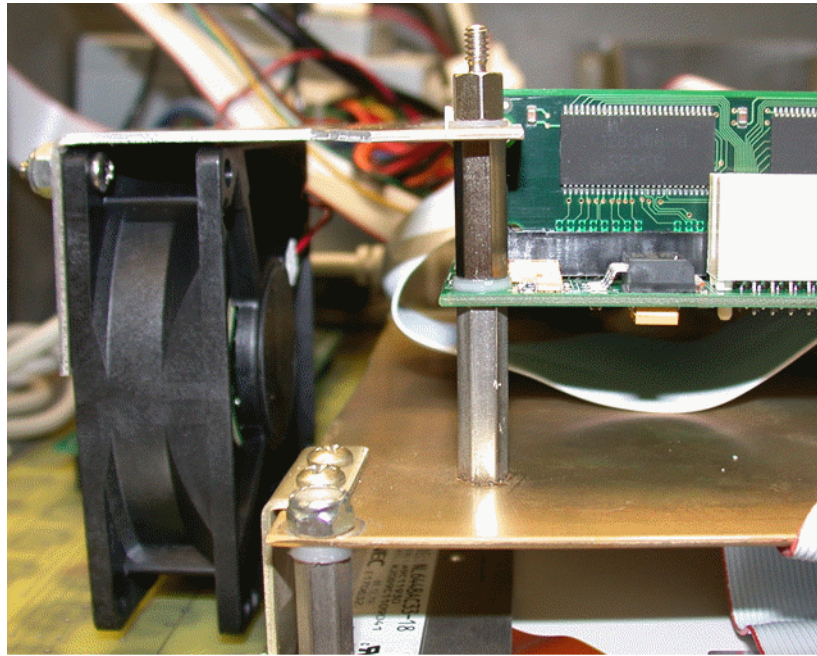
Pin 1 is towards the edge of the motherboard, nest to the Ethernet socket. When routing the LCD cable you want to make a 45-degree bend right after the LCD connection on the motherboard. Then run it out over the RAM and fold the excess in half and slide it between the LCD screen and the metal plate under the motherboard.

4. Attach Hard Drive cable to CN6 on the motherboard and the other end to the hard drive. This cable should be keyed. If not the red stripe goes to Pin 1, which is towards the CPU Socket, CPU1

5. Attach old floppy drive cable to CN17 on the motherboard, it is also keyed

6. Attach old serial cable to CN16. This socket is not keyed; pin 1 is marked by the red stripe must be aligned with pin 1 on the motherboard end. Pin 1 on CN16 is next to CN17

7. Attach old LPT1 cable to CN14 on the motherboard. This socket is keyed and can only go one way.

8. Connect new Ethernet cable to CN15 on the motherboard

9. Plug ATX power connector into CN9. It will only plug in one way.

10. Connect the new keyboard/mouse cable to CN11. It will only connect one way. The keyboard cable plugs into the 4 pin connector on the back of the M400 Keyboard

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 up and over the RAM. You will only need to make one fold in the cable as shown in picture 3. 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.

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 1/4" standoffs. (See pic. 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 the LCD screen resolution. To do this, hit the DEL key on the keyboard when the control does the Memory check. Go into STANDARD CMOS SETUP. Change the PANEL type to 640x480 18 Bit. You must change the HALT option to ALL, BUT KEYBOARD.
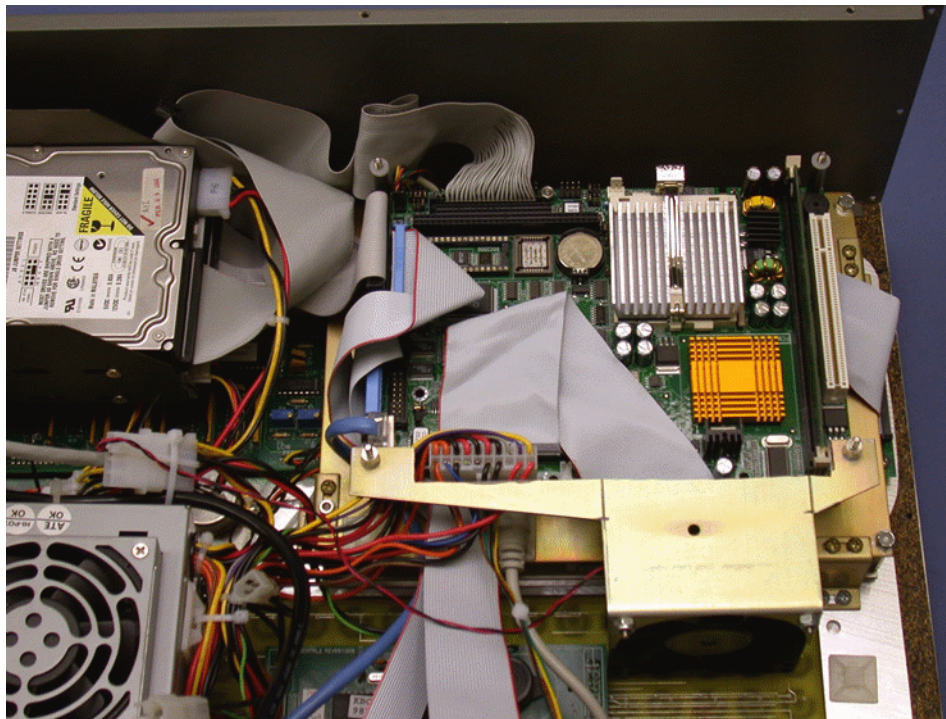
Picture 1: Aaeon with cables inserted correctly:

Picture 2: Correct installation of fan and bracket on the motherboard:

Picture 3: Aaeon motherboard installed in an M400:

Notes:

1. Ensure that the LCD Descrambler card and cable are correctly inserted, shown in picture 4.
2. Check that the CPU7 has enough clearance above all the cables on the motherboard, especially the ATX power cable.
3. 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.

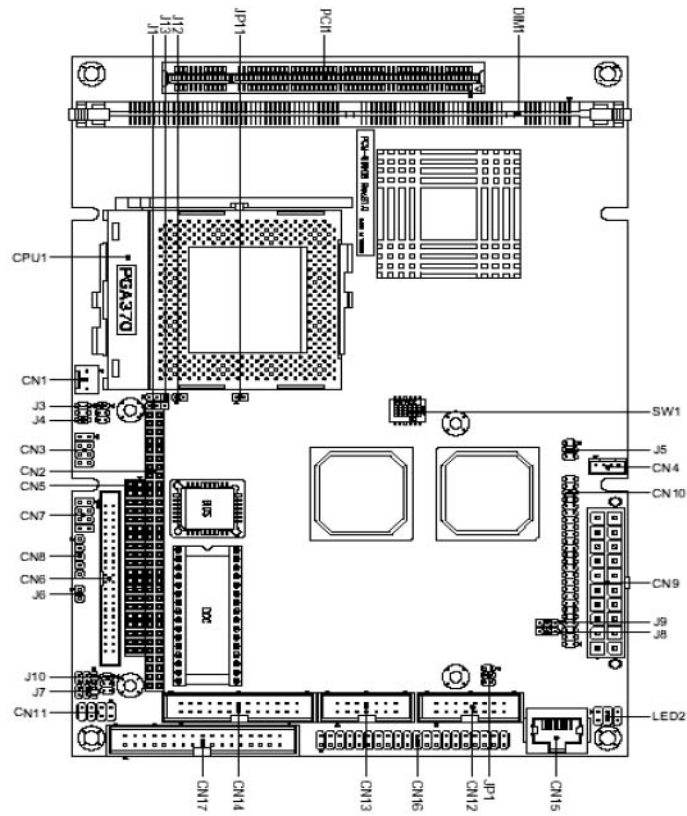Picture 4: Aaeon motherboard LCD Descrambler card:

Motherboard Connection Labels

Connectors	
Label	Function
CN1	CPU fan power connector
CN2	PC/104 connector
CN3	USB ports connector
CN4	CD-ROM signal input connector
CN6	IDE drive connector
CN7	Front panel connector
CN8	IrDA connector
CN9	ATX power connector
CN10	LCD display connector
CN11	Keyboard and PS/2 mouse connector
CN12	VGA display connector
CN13	Audio connector
CN14	Printer port connector
CN15	100Base-T Ethernet connector
CN16	Serial ports connector
CN17	Floppy dirve connector
U18	DiskOnChip socket
LED2	Ethernet Tx/Rx/Link LED connector

Locating jumpers & connectors

Document History

Rev1 Created on *2002-08-08*