

TB262 (Rev1) - Installing an Aaeon PCM-LN02 Motherboard Kit into an M15-6 through M15-10 Console

Purpose:

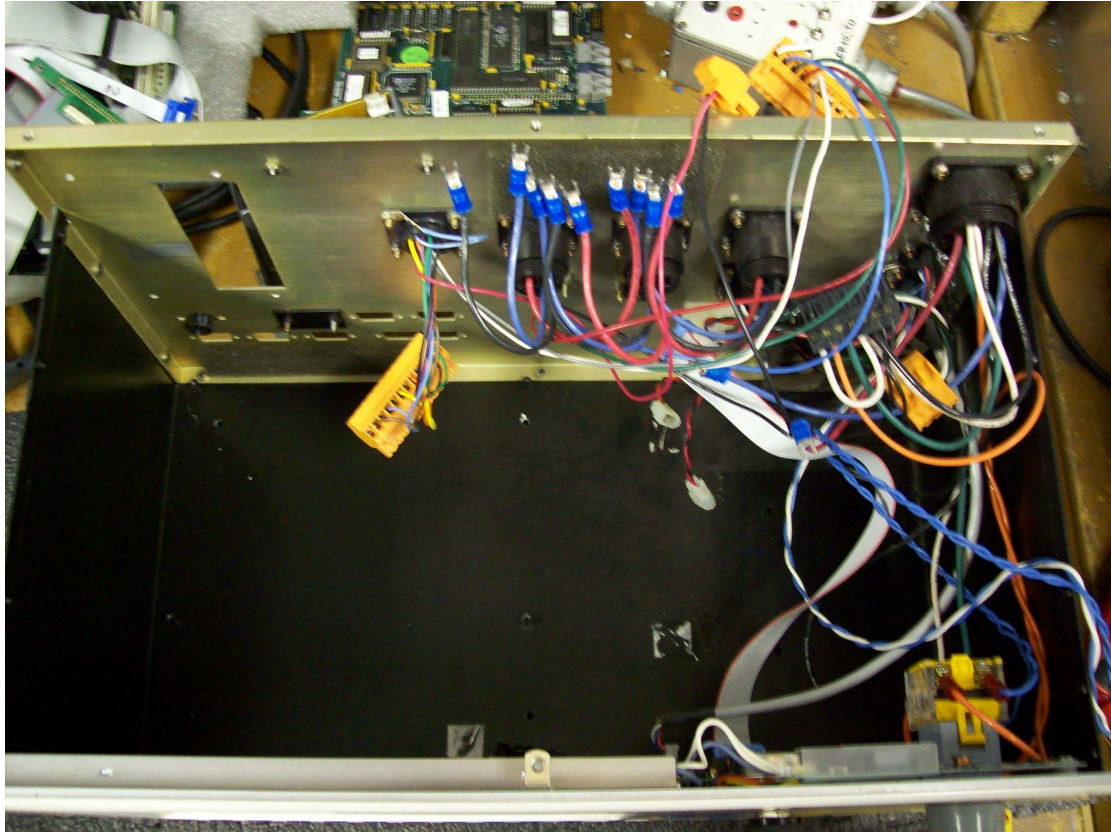
This document will provide you with the necessary instructions to install an Aaeon PCM-LN02 motherboard upgrade kit into an M15-6 through M15-10 console. Make sure to read the document in its entirety prior to installation of the kit.

Requirements:

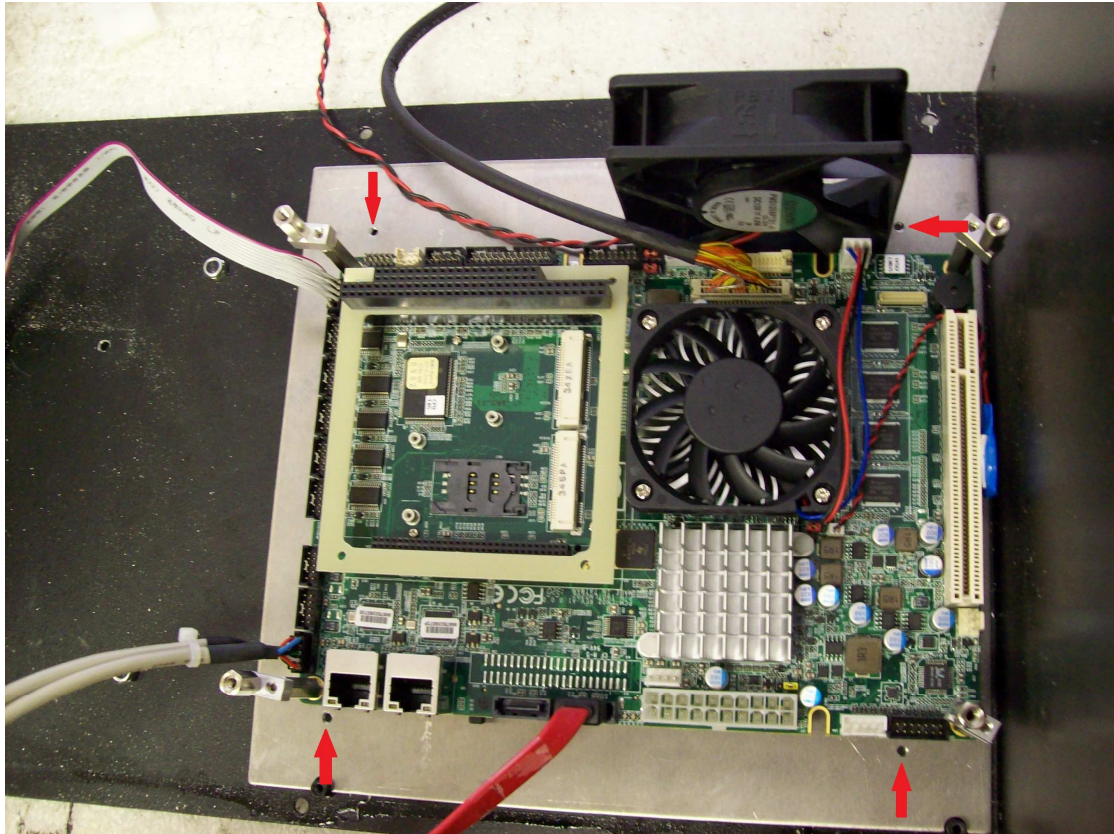
1. Aaeon PCM-LN02 upgrade kit which includes the following:
 - a. PCM-LN02 motherboard
 - b. PC104 extender
 - c. LCD cable with hold down bracket
 - d. COM port cable
 - e. Dual USB cable
 - f. Ethernet cable
 - g. SATA cable
 - h. MicroATX power supply with mounting brackets and AC power cable
 - i. SATA SSHD with Linux installed mounted onto floppy bay bracket
 - j. Motherboard mounting plate
 - k. 6x 6-32x1/4" black screws – used for securing motherboard mounting plate and microATX power supply
 - l. 5x 6-32x1/2" standoffs with threaded holes on both ends
 - m. 4x 6-32x1/2" standoffs
 - n. 4x 6-32x1" standoffs
 - o. 4x custom 6.5mm offset standoffs
 - p. 4x 6-32x1/2" setscrews
 - q. 3x DB9 ribbon cable extenders
 - r. USB connector plate
 - s. DB25, keyboard, mouse, and Ethernet blank-outs
 - t. Console fan/DP4 power cable
 - u. Drive/LCD inverter power cable
 - v. 60cfm 80mm fan with Molex connector
 - w. 2x L-brackets
 - x. 2x 6-32x3/8" stainless steel screws
 - y. USB keyboard
2. Tech bulletin 167 if previous operating system was DOS
3. Tech bulletin 200 if previous operating system was Linux and are unable to generate a report
4. Tech bulletin 243
5. Drill with No. 11 drill bit

Procedure:

1. Remove the top cover of the M15. There will be a board mounted onto the top of the M15 lid. It will either be a SERVO1 or M15DRV1 depending on the version of the M15. Remove the existing floppy drive bay, CPU7P3, motherboard with all of its cables, and power supply from the M15 so that you have a bare M15 as shown in the picture below.

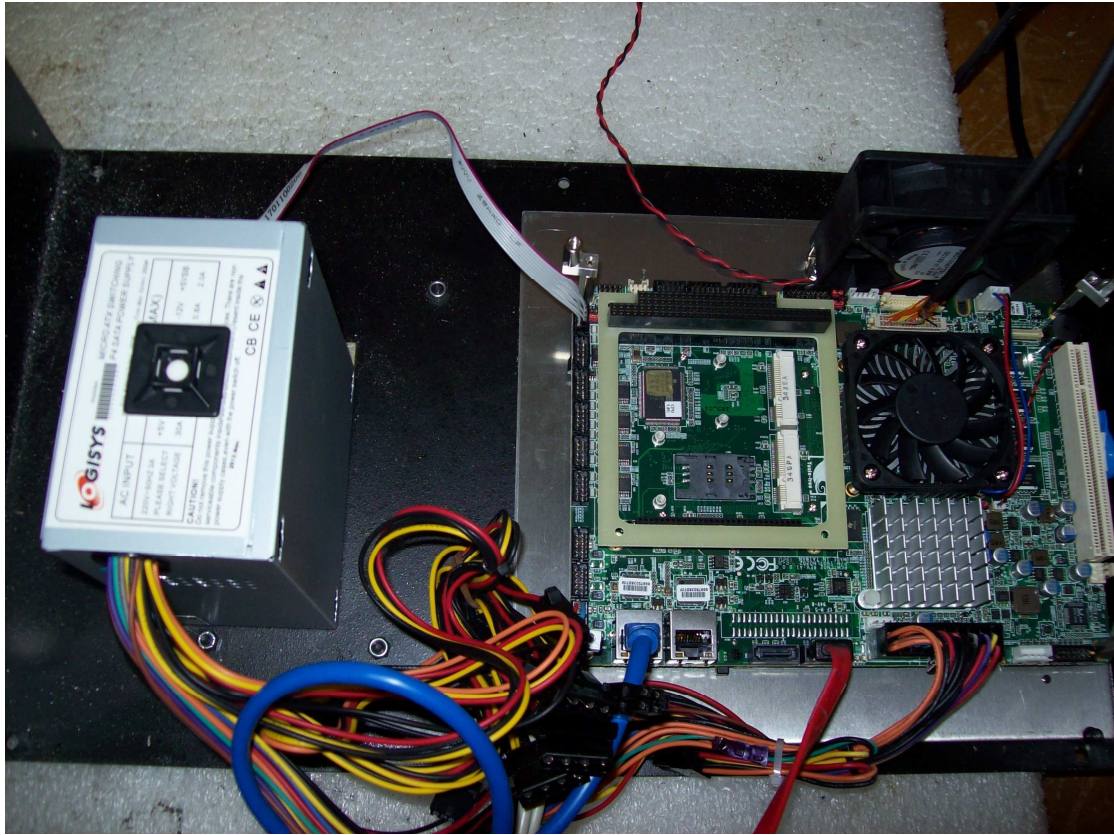


2. Place the motherboard mounting plate into the M15. The motherboard mounting plate will only fit in one direction. Some M15s had zip tie holders mounted on the bottom of the M15. They will need to be removed in order for the motherboard mounting plate to sit flush on the bottom of the M15. It can be used as a template to mark the holes on the bottom of the M15 which are designated by the red arrows in the picture below. The front and back panels were removed from the M15 to make it easier to access the holes in order to drill them.



3. Once the holes are drilled, secure the motherboard mounting plate onto the bottom of the M15 using 4 6-32x1/4" black screws.

4. When installing the microATX power supply, it would be advantageous to have it installed in a location in which one of the power supply mounting brackets will be installed onto the side wall of the M15 while the other power supply mounting bracket will be installed onto the bottom of the M15. If the M15 already had a microATX power supply installed, it is recommended to use the existing holes for that power supply instead of making new holes which the picture below shows. All existing holes that will not be used or covered by the power supply will need to be covered. A 6-32x3/8" black screw and a 6-32 nylon lock nut can be used as shown in the picture below.



5. Connect the power connections from the microATX power supply to the Aeon PCM-LN02 motherboard, LCD inverter, and the fan.

6. Remove the LCD descrambler board, which is shown in the picture below, from the LCD and connect the new LCD cable.

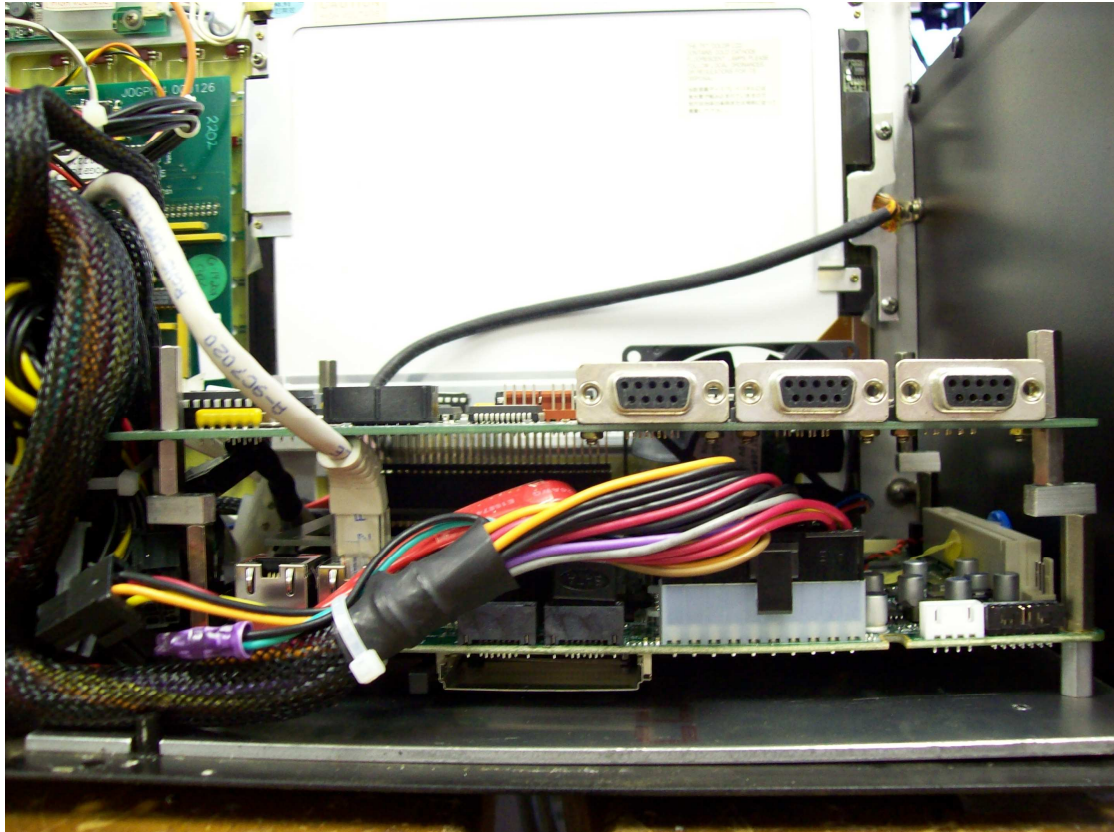


7. Install the bracket to secure the LCD cable connector to the connector on the LCD as shown in the picture below.



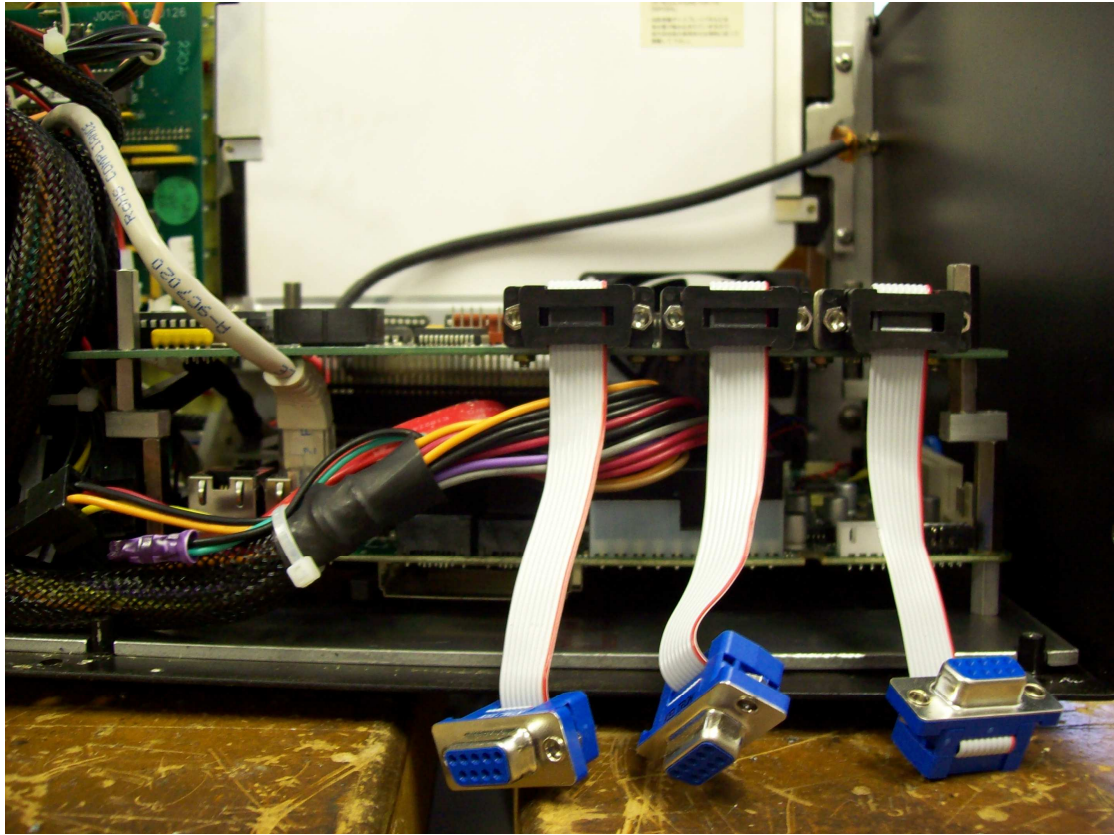
8. Connect the USB keyboard to one of the USB connectors. Power the console. The power supply and kit fans should spin. You should see the system trying to boot into the CNC10 software on the display and then give a 64180 error since the CPU7 is not installed. Shut the system down.

9. Install the CPU7 onto the Aeon PCM-LN02 motherboard making sure that the pins on the CPU7 line up to the holes on the connectors on the motherboard. Once you have verified that the pins line up correctly, push down on the CPU7 until it cannot go down any further. Rotate the offsets until the holes on the standoffs line up with the holes on the CPU7. Install the existing 6-32 3/4" standoffs to tighten the CPU7 onto the motherboard as shown in the picture below.

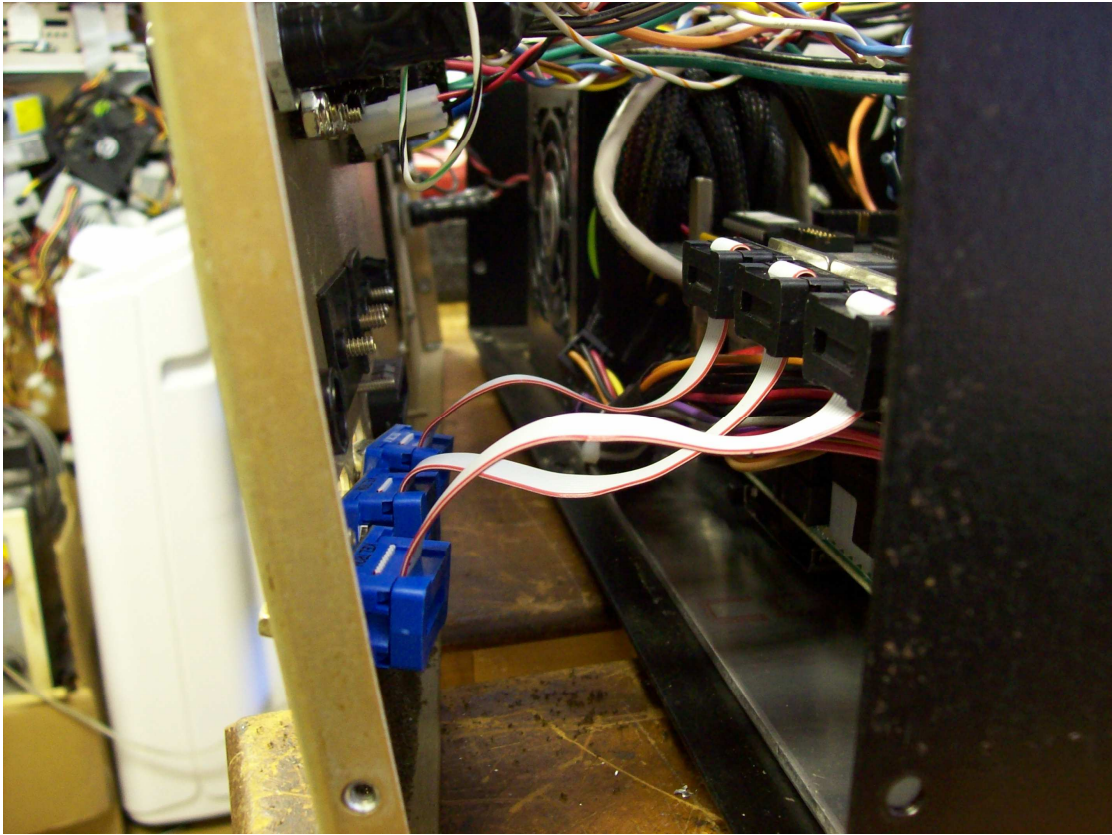


10. Power the console and verify that it goes into the CNC10 software. Press F10 (Shut Down) ->F2 (Power Off) to shut the system down. Unhook the USB keyboard.

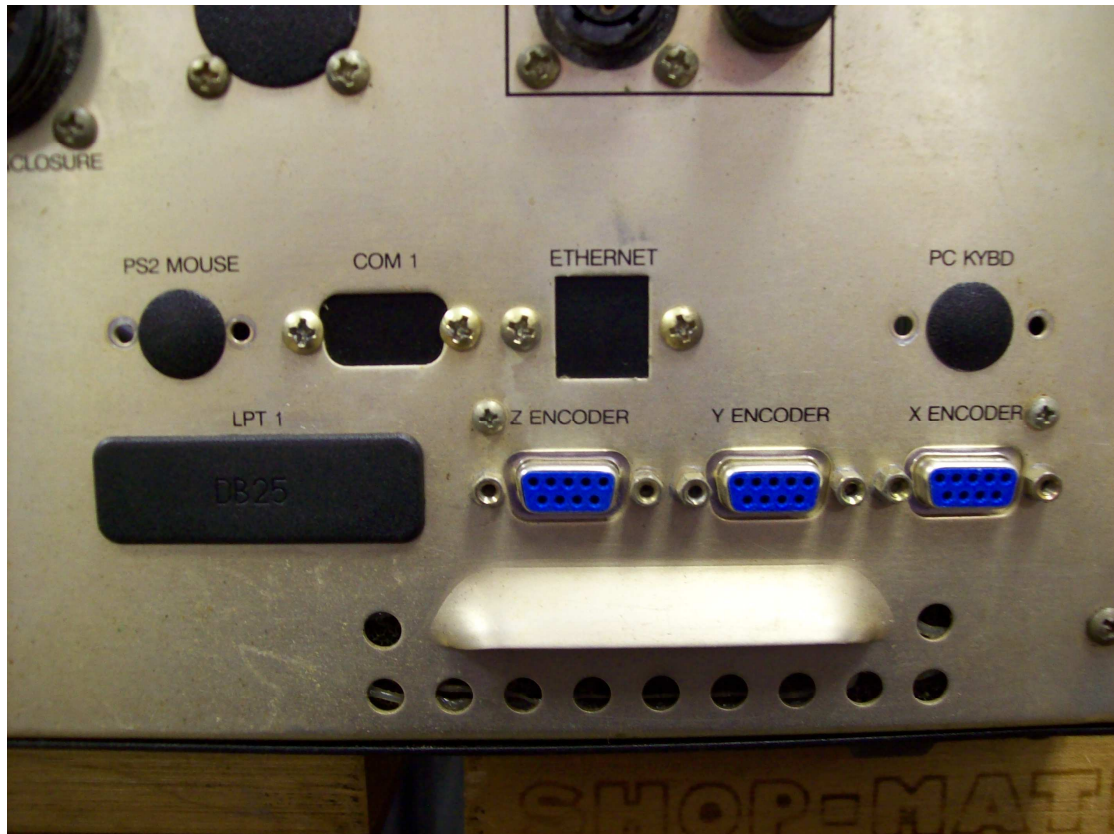
11. Install the M15 front panel back onto the M15 bottom panel. Install the DC encoder extension cables onto the CPU7 as shown in the picture below.



12. Install the CPU7 cover plate. Install the DB9 connectors from the DC encoder extension cables onto the M15 back panel as shown in the picture below.



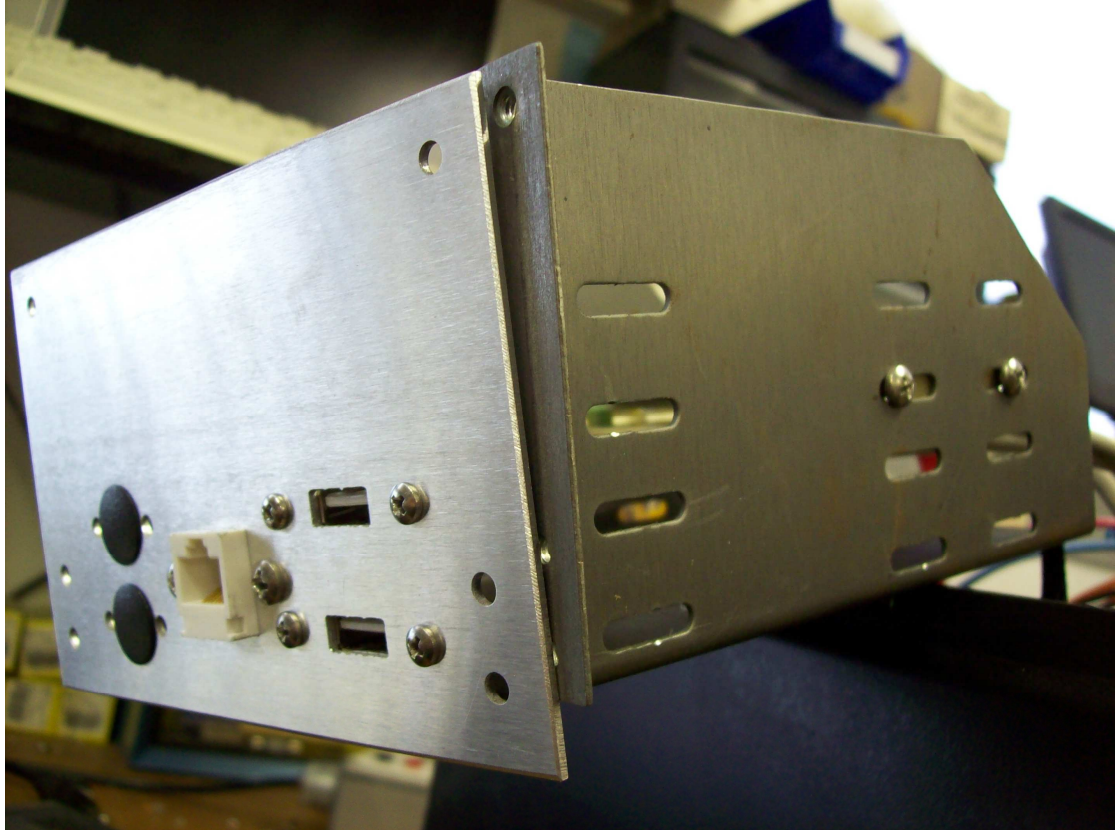
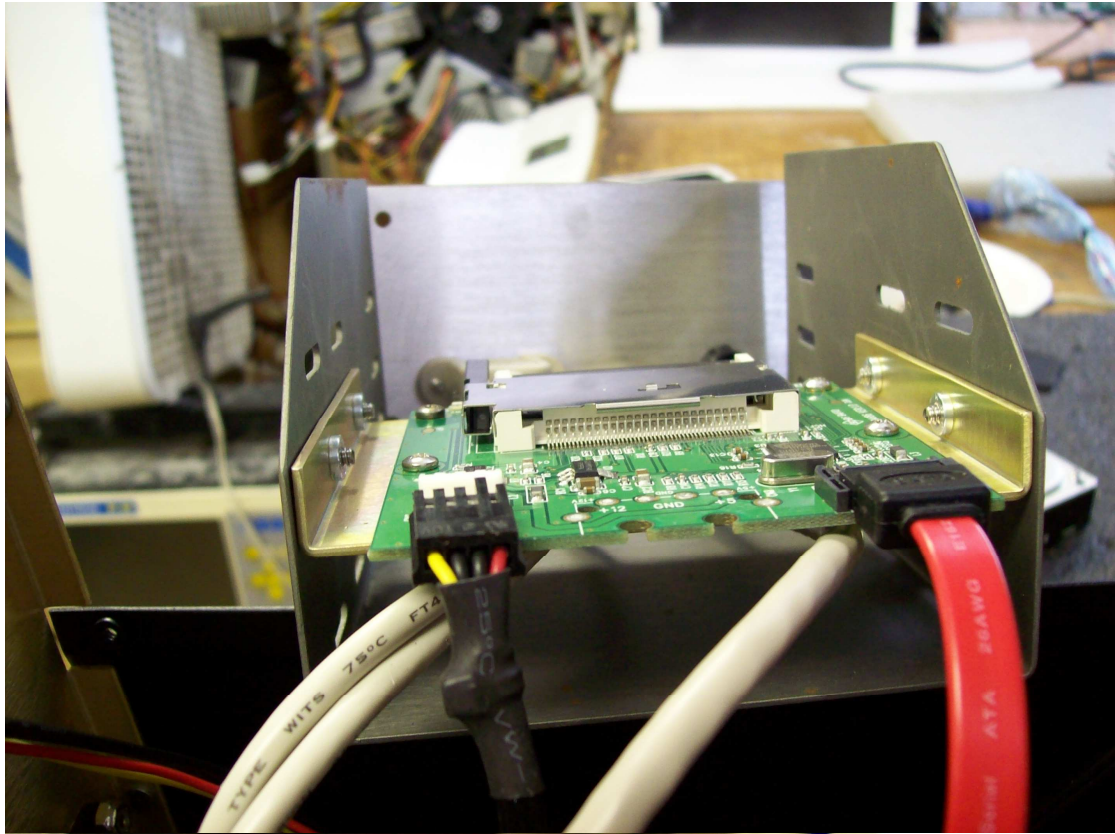
13. Install the blank out covers onto the M15 back panel for the keyboard, mouse, COM1, Ethernet, and DB25 holes as shown in the picture below.



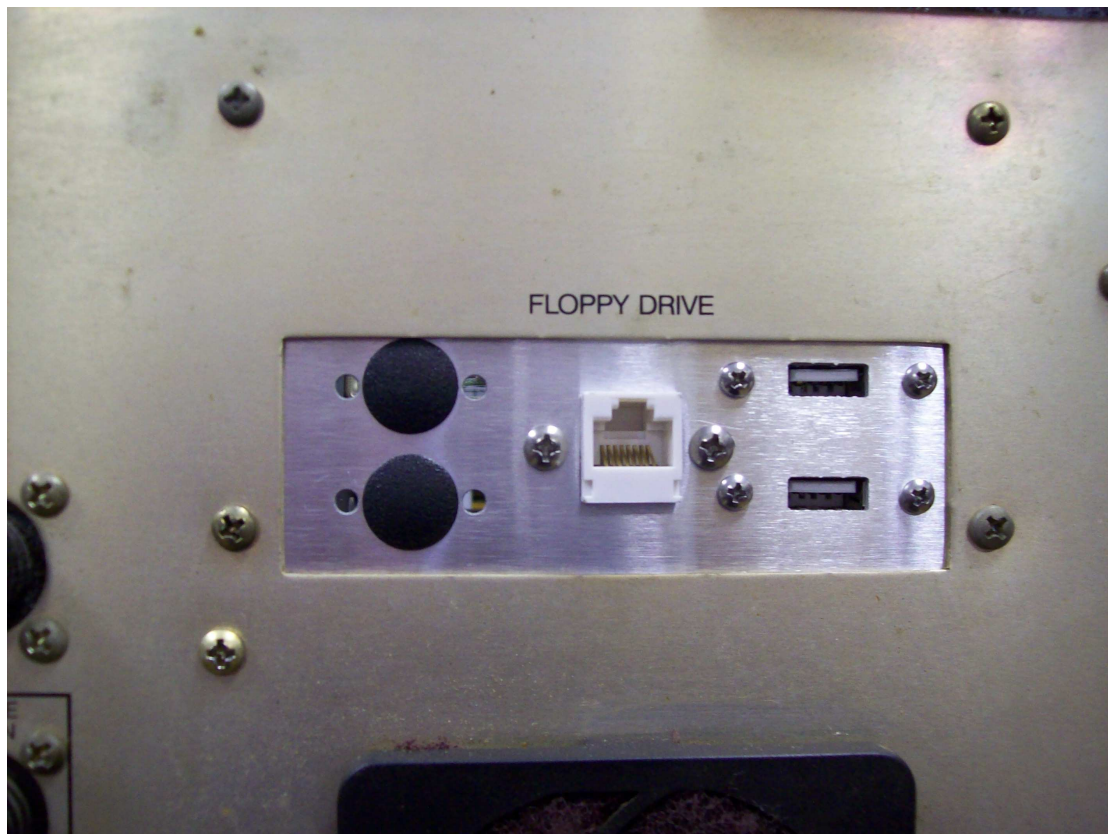
Note: If your system uses the COM port for the spindle speed control, instead of installing the blank out cover for COM1, install the RS-232 COM port cable to the back of the M15 back panel.

14. Install the M15 back panel onto the M15 bottom panel.

15. Remove the HDD and floppy drive from the HDD/floppy drive bay. Route the USB connector plate with cables on top of the HDD/floppy drive bay. Install the SSHD with mounting bracket onto the HDD/floppy drive bay as shown in the pictures below.



16. Install the USB connector plate and HDD/floppy drive bay onto the M15 back panel where the floppy drive door was located as shown in the picture below.



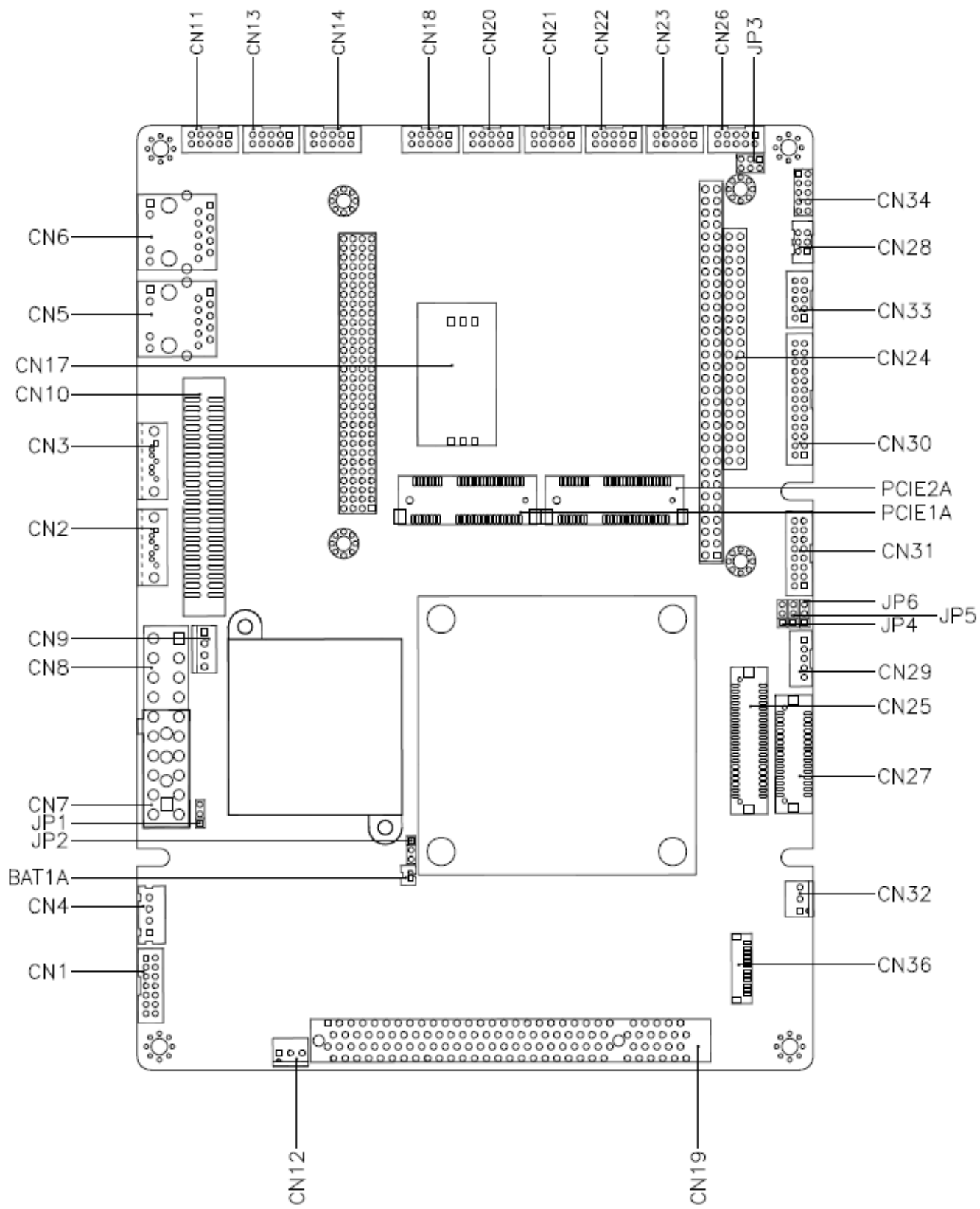
17. Install the M15 top lid with the SERVO1/M15DRV1 board. Install the USB keyboard.

18. Power the console. Load the configuration files as per TB167 and/or TB243.

19. Re-install the M15 console onto the machine and verify its functionality.

20. Generate a new report and email it to support@centroidcnc.com. If you do not know how to generate a report, please follow TB193.

PCM-LN02 Motherboard Connection Diagram



PCM-LN02 Motherboard Connection Table

Connector Label	Function
CN1	Audio Line In/Out and MIC Connector
CN2	SATA 1 Connector
CN3	SATA 2 Connector
CN4	Stereo Audio Output Connector
CN5	RJ-45 Ethernet #1 Connector
CN6	RJ-45 Ethernet #2 Connector
CN7	+12V Voltage Input Connector(Optional)
CN8	ATX Power Connector
CN9	+5V/+12V Output Connector for SATA HDD using
CN10	IDE Connector (Optional)
CN11	USB Port 1, 2 Connector
CN12	CPU Fan Connector
CN13	USB Port 3, 4 Connector
CN14	USB Port 5, 6 Connector
CN15	PCI-104 Connector
CN17	SIM Card Socket
CN18	COM Port 6 Connector
CN19	PCI Slot
CN20	COM Port 5 Connector
CN21	COM Port 4 Connector
CN22	COM Port 3 Connector
CN23	COM Port 2 Connector
CN24	PC-104 Slot / ISA Interface
CN25	TTL LCD Connector (Optional)
CN26	COM Port 1 Connector
CN27	LVDS Connector
CN28	PS-2 Keyboard & Mouse Connector
CN29	LCD Inverter Connector
CN30	Parallel Port Connector
CN31	CRT Display Connector
CN32	System Fan Connector
CN33	Digital I/O Connector
CN34	Front Panel
CN35	PCMCIA Slot
CFD1	Compact Flash Disk
PCIE1	Mini-Card Slot #1
PCIE2	Mini-Card Slot #2

Document History

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