Replacing the PanelMate Power Pro 1785 Series, PanelMate ePro 7585x-8 and 7685x-8 Series Backlight Assembly

Introduction
The Backlight Replacement Kit provides a replacement backlight for the PanelMate Power Pro 1785 Series, the PanelMate ePro 7585x-8 Series, and the PanelMate ePro 7685x-8 PS Series (all models) units. Although the figures provided are for touchscreen models, disassembly for keypad models is similar. For bulb replacement in keypad units, follow the same procedures as for touchscreen units.

Contents
- Backlight
- Disposable Grounding Wrist Strap

Caution: Electrostatic Discharge (ESD) can damage static-sensitive electronic components. You should perform these procedures only at an ESD workstation. If an ESD workstation is not available, you can provide some protection by wearing an anti-static wrist strap and attaching it to a metal part of the system chassis.

Warning: This procedure requires electrical and mechanical skill and should be attempted only by qualified technicians.

Required Tools
- Phillips screwdriver—size P0 and P1. Magnetic would be helpful.
- Nut Driver or socket size ¼”

Instructions for Replacing the Backlight in a 1785 Series unit
1. Disconnect the power source cable and any other cables from the PanelMate unit. If a high speed interface module is attached, remove the module.
2. Remove the cover from the electronics module by unscrewing the screws holding the cover on.
3. Remove the circuit board by removing the standoffs, and the screws holding the circuit board to the display plate assembly.
4. Disconnect the backlight cable from the inverter. If necessary, you may have to remove the inverter by removing the screws connecting the inverter to the display plate.
   Note: In newer models, a standoff had been placed next to the backlight cable connector to prevent it from disconnecting from the inverter. The inverter has to be removed in order to disconnect the backlight cable.
5. Remove the standoffs on the display plate to release it from the front panel.
6. Remove the display module from the display plate by unscrewing the screws at the corners, and pulling the backlight cable through the cutout in the display plate.
7. Remove the video cable from the display module.
8. With the display module facing down, remove the backlight cartridge by unscrewing the two screws holding the backlight cartridge to the display module and sliding gently apart about 1/8 inch and then lifting up. Figure 1 shows the backlight removed.

9. Gently and carefully place the new backlight cartridge into the display module, slide into position, and reattach the screws. Make sure the backlight cable is not crimped when you reattach the screws.

   **Caution:** The backlight cartridge is very fragile. Do not bend the backlight, but replace it by keeping the light perfectly straight.

   **Cleaning:** Clean off any fingerprints or dirt that may have gotten on the inner display surface or the backside of the front panel.

10. Reattach the video cable to the display module.

11. Reattach the display module to the display plate, replacing the screws, and making sure that you push the backlight cable through the cutout in the display plate.

12. Reattach the display assembly to the front panel, replacing the standoffs.

13. Reconnect the backlight cable to the inverter, and if necessary, reattach the inverter to the display plate.

14. Reattach the circuit board, screwing on the screws and the standoffs.

15. Reinstall the electronics module cover.

16. If used, reattach the high-speed interface module.

17. Connect the power source cable and any other cables.
Instructions for Replacing the Backlight in a 7585x-8 Series unit

1. Disconnect the power source cable and any other cables from the PanelMate unit.

2. Remove the chassis cover from the electronics module by unscrewing the six screws at the back of the unit. See Figure 2.

3. Remove the screws holding the CPU circuit board, the connector plate with USB and serial expansion connectors, and the blank slot protector. See Figure 3.

4. Remove the blank slot protector and set it aside.

5. Remove the connector plate with USB and serial expansion connectors from its slot; however, it may remain connected to the CPU circuit board.
6. Unplug the black display cable and the red and white touchscreen wire bundle from the CPU circuit board. See Figure 4.

7. Unplug the fan cable from the connector. See Figure 4.

8. Remove the CPU circuit board by grasping it and pulling up with a slight rocking motion being careful not to pull on the memory board. See Figure 3.
9. Remove the four screws holding the motherboard to the standoffs. See Figure 5.

10. Remove the motherboard. While you can leave the power wires attached, you may find it more convenient to remove the wires and set the motherboard aside. Take care not to damage the motherboard during the rest of this procedure.

11. Unscrew the 5 screws and remove the CPU bracket/plate. Set it aside. See Figure 6.
12. Remove the two screws holding the inverter board and remove the inverter board. This requires a small Phillips-head screwdriver. See Figure 7.

13. Unplug the backlight cable from the connector on the left side of the inverter board. See Figure 7. The inverter power cable can be removed, if desired, but this is not required.

   **Note:** In newer models, a standoff had been placed next to the backlight connector to prevent the cable from disconnecting from the inverter. The inverter has to be removed in order to disconnect the backlight cable.

14. Unplug the touchscreen jumper cable from the touchscreen connector.

15. Remove the four screws in the corners that hold the front panel. See Figure 7.
16. Loosen or remove the center right and center bottom screws. This loosens the display plate so you can get the touchscreen ribbon cable connector out. See Figure 8.

17. Remove front panel and lay it aside.

18. Remove the four corner screws of the display. See Figure 9. As you remove the display from the display plate, be careful to disconnect the video cable by pulling straight back and gently guide the backlight cable through the opening. It may be retained by the standoff.
19. With the display module facing down, remove the backlight cartridge by unscrewing the two screws holding the backlight cartridge to the display module and sliding gently apart about 1/8 inch and then lifting up. Figure 10 shows the backlight removed.

![Figure 10](image)

20. Gently and carefully, place the new backlight cartridge into the display module, slide into position, and reattach the screws. Make sure the backlight cable is not crimped when you reattach the screws.

**Caution:** The backlight cartridge is very fragile. Do not bend the backlight, but replace it by keeping the light perfectly straight.

**Cleaning:** Clean off any fingerprints or dirt that may have gotten on the inner display surface or the backside of the front panel.

21. Reattach the video cable to the video connector on the display module. See Figure 10.

22. Insert the backlight cable through opening.

23. Reattach the display to the display plate.

24. Reattach the front panel to the display plate making sure that you push the touchscreen ribbon cable connector through the cutout in the display plate. Make sure all assembly screws have been retightened.

25. Reattach the touchscreen jumper cable to the touchscreen connector. (See Figure 11.)

![Figure 11](image)
26. Reattach the backlight cable to the inverter board. Ensure that the two wires are on either side of the small white standoff. See Figure 12.

27. Reattach the inverter board. Make sure the wires are routed through the cable clip.

![Figure 12](image)

28. Reconnect the inverter power cable to the inverter if it was removed.

29. Should the touchscreen wire bundle need to be reconnected to the touchscreen controller card, make sure the connector labeled “TS” is connected to the touchscreen board and is facing out.

30. Verify that all previous connections are in place. See Figure 5.

31. Reattach the slot bracket using the five flat-head screws.

32. Reinstall the motherboard, screwing the four screws into the standoffs. If the screw holes on the right are slotted, then the screws with flat washers should be used.

33. Reattach the power wires if they were removed. The black wire is on the extreme left and the red wire is on the extreme right. See Figure 5.

34. Reinstall the CPU circuit board into the slot closest to the display panel making sure that it is fully seated.

35. Reattach the black display cable to the CPU circuit board making sure most of the wires are to the right (away from the fan) and taking care to center it on the pins without bending any. See Figure 4.

**Caution:** If the display cable is not aligned correctly on the pins, the display and CPU can be damaged beyond repair during power-up.

36. Reattach the red and white touchscreen wire bundle to the CPU circuit board making sure the red wire is to the left (toward the fan) and taking care to center it on the pins without bending any. See Figure 4.

37. Reinstall the connector plate with USB and serial expansion connectors next to the CPU board. Be careful to avoid the protruding screw. Reinstall the remaining slot protector.

38. Reconnect the fan cable to the connector and tuck the cables and connectors back in making sure the wires remain clear of the fan.

39. Verify that all previous connections are in place. Reinstall the chassis cover.

40. Connect the power source cable and any other cables.
Instructions for Replacing the Backlight in a 7685x-8 ePro PS Series unit

1. Disconnect the power source cable and any other cables from the PanelMate unit.

2. Remove the chassis cover from the electronics module by unscrewing the five screws at the back of the unit and the single screw on the connector side of the unit. See Figure 13.

3. Remove the standoffs from the four corners of the CPU circuit board. See Figure 14.
4. Rotate the unit 90°. Remove the screws from the power supply and disconnect the two power connectors. See Figure 15.

**Figure 15**

**Note**: If the unit is an Outdoor Series model, a fan bracket will be mounted above the PCI connector and wired into the power supply. The fan bracket will need to be unscrewed before the power supply can be removed from the CPU circuit board.

5. Rotate the unit back 90°. Remove the power supply from the board and remove the screws from the CPU circuit board. See Figure 16.

**Figure 16**

**Note**: If the unit is an Outdoor Series model, the screws on either side of the PCI connector will be replaced with standoffs for a fan bracket which was removed in Step 4. Remove the standoffs from the CPU circuit board.
6. Gently tilt the circuit board up along the fan edge of the board and remove the video cable, inverter cable and touchscreen cable. See Figure 17. The CPU circuit board is now free from the unit.

![Figure 17](image)

7. Remove the standoffs from the four corners of the display plate along with the screws from the inverter board. The screws for the inverter board require a small Phillips-head screwdriver. See Figure 18.

![Figure 18](image)

8. Gently pull the touchscreen cable through the opening in the display plate and remove the front panel. Lay it aside.

9. Unplug the backlight cable from the connector on the left side of the inverter board.

**Note:** A standoff had been placed next to the backlight connector to prevent the cable from disconnecting from the inverter. The inverter has to be removed in order to disconnect the backlight cable.
10. Remove the four corner screws of the display. See Figure 19. As you remove the display from the display plate, be careful to disconnect the video cable by pulling straight back on the display. Also be careful to gently pull the backlight cable through the opening in the plate.

![Figure 19]

11. With the display module facing down, remove the backlight cartridge by unscrewing the two screws holding the backlight cartridge to the display module and sliding gently apart about 1/8 inch and then lifting up. Figure 20 shows the backlight removed.

![Figure 20]

12. Gently and carefully, place the new backlight cartridge into the display module, slide into position, and reattach the screws. Make sure the backlight cable is not crimped when you reattach the screws.

**Caution:** The backlight cartridge is very fragile. Do not bend the backlight, but replace it by keeping the light perfectly straight.

**Cleaning:** Clean off any fingerprints or dirt that may have gotten on the inner display surface or the backside of the front panel.

13. Reattach the video cable to the video connector on the display module. See Figure 20.
14. Insert the backlight cable through opening.
15. Reattach the display to the display plate. See Figure 19.
16. Reattach the display plate to the front panel making sure to feed the touchscreen cable through the opening in the plate. (See Figure 18).
17. Reattach the backlight cable to the inverter board. Ensure that the two wires are on either side of the small white standoff. See Figure 18.
18. Reattach the inverter board. See Figure 18.
19. Reconnect the inverter power cable to the inverter if it was removed. Make sure the cable is routed through the cable clip. See Figure 18.
20. Reconnect the video cable, the inverter cable and the touchscreen cable to the CPU circuit board. See Figure 17.
   **Caution:** If the display cable is not aligned correctly on the pins, the display and CPU can be damaged beyond repair during power-up.
21. Reinstall the CPU circuit board. See Figure 16.
22. Reattach the power supply and reconnect the power connectors. Also reattach the fan bracket if the unit is an Outdoor Series model. See Figure 15.
23. Reattach the standoffs in the four corners of the CPU circuit board. See Figure 14.
24. Verify that all previous connections are in place and that all wires are inside the edges of the display plate. Reinstall the chassis cover. See Figure 13.
25. Connect the power source cable and any other cables.