

## Comfort Controller Upgrade Procedure

*Note that this procedure assumes that the user will be updating a controller from inventory, thus facilitating a "Hot Swap" of the running controller to minimize downtime.*

*Should you elect to upgrade the existing in-service controllers, you will need to perform Step 17 first, skip Step 18, perform the chip upgrade as detailed in Steps 1 through 16, then complete Steps 19 through 21. Lastly, Step 22 will be skipped.*

### **Steps to be taken on the bench**

1. Prior to beginning the upgrade procedure, the basic functions of each controller must be reviewed to insure that mechanical system functionality is not impaired during the upgrade. While this procedure is designed to minimize equipment downtime, the user should be prepared to switch critical systems to manual and/or hand as needed to insure occupant comfort is maintained.
2. In preparation for the upgrade, the following steps must be taken:
  - The latest controller database must be uploaded and saved. Verify that the latest revision of all BEST++ programs are also backed up. Copy this database as well as all required BEST files to the PC to be used to perform the upgrades.
  - Review the status display tables of each controller, and record the point names and value of any points that are forced. All forces will be manually re-entered after the controller is upgraded and reinstalled.
  - Ensure that you have a clean, dry surface to work on. The user must wear a wrist ground strap to eliminate any static electricity.
3. If the controller has a door, remove it using the following procedure:
  - a. Open the door about 60 degrees and gently squeeze the door at the top where it pivots.
  - b. Pull the door downward toward the bottom of the unit. It is usually easier doing one side at a time.
4. The top cover is removed by disconnecting the plastic snaps, one at a time, using the following procedure. The use of a flat blade screwdriver may be required to pry apart the locking tabs located in the plastic's rectangular slots:
  - a. Release the first snap located between the two RJ11 connectors. Gently squeezing in the top cover above the snap and pulling the two covers apart accomplish this.
  - b. Next, release the snap located at the top of the unit. This snap is located by finding the rectangular opening in the top cover. When located, gently squeeze in the top cover at the parting line and pull the two covers apart.
  - c. Next, release the snap located at the bottom front of the unit near the power connector. When located, gently squeeze in the top cover at the parting line and pull the two covers apart.
  - d. Next, release the snaps along the back of the unit starting at the top. This snap is located by finding the rectangular opening in the top cover. When located, squeeze in the top cover at the parting line and pull the two covers apart. When completed, the top cover should come off easily.
5. Remove the existing PROM (U17); it is positioned at the top of the unit along the back wall.
6. Place the new PROM on the table, oriented so that it is sideways and held edgewise, with one row of pins contacting the work surface, and the other facing up. Carefully apply pressure to the PROM so that the pins are bent in slightly (the pins on a new PROM are normally splayed outward, making initial insertion difficult). Repeat for the other side. This will ensure that the new chip more easily slides into the socket.

7. Install the new PROM making sure it is not installed backwards and all the pins are properly seated in the socket. The PROM must be oriented in the sockets so that the half-circle indentation on the PROM corresponds with the similar mark on the circuit board.
8. Replace the cover by placing it squarely on top of the unit and snapping together in the same order as the cover was removed.
9. If the controller had a door, replace it by laying it flat on the unit in the closed position and sliding it forward until it snaps into place.
10. Perform a database reset by connecting a reset jumper (a "straight through", 4 or 6 conductor modular phone cable) between the two RJ11 connectors J5 and J6 OR a straight through phoenix to phoenix cable between the CCN bus and SIO bus sockets. Apply power to the controller. After about 10 seconds, remove the reset jumper.
11. When the red status LED returns to the normal 2Hz toggle rate, update the controller's baud rate and address (the default address will be 0,1 and a baud rate of 9600). Using the Element Set-up Utility or Address Search Utility, reset the address and baud rate to match the requirements of its final location.
12. From ComfortVIEW or ComfortWORKS Network Manager, select the controller, and perform a full controller download. If prompted to initialize, choose "yes".
13. When the controller has completed creating the database (red status LED returns to the normal 2Hz toggle rate), perform a Verify report from the "Configure" pull down menu. If any errors are noted, either reload the entire database, or load the tables in question individually.
14. Download any BEST++ programs previously contained in the controller.
15. If there were any forces present, apply them now.
16. Set the controller date and time.

#### **Steps to be taken at the controller location**

17. At the location of the controller to be replaced, perform whatever steps are required to keep the mechanical systems operating. Then, power down the controller and remove the I/O connectors and comm connectors. Lastly, remove the controller from the cabinet.
18. Examine the DIP switch settings on the existing controller just removed. Configure the DIP switch settings of the new controller to match the existing controller.
19. Install the updated controller, insert the I/O connectors, comm connectors, and lastly the power connector.
20. At the conclusion of the installation, have someone verify communications to the controller, and perform a full Upload of the controller database to the primary operators ComfortVIEW workstation. This is necessary to update the Controller ID table with the correct version number.
21. Modify the PART NAME on the module's identification label to indicate the software version now installed in the unit. Append the PART NAME text on the label with "Rev. 0x", where 0x is the revision number of the software upgrade. Update any other labeling that may have been used on the donor controller to identify its new location.
22. The controller just removed will now be placed in the upgrade pool and used at another location.