

How to Run Bert Single Part Placement -

1. Apply solder paste to the desired board
2. Add parts to be placed in the square boxes on Bert
 - a. Make sure they are in the left most corner of the square boxes.
 - b. They need to be aligned with how they will be placed on the board. There is no rotation to parts before they are placed on the board.
3. Plug in the cart (the extension cord is located on the left side of the cart)
4. Turn on the computer, and log in based on the given login information
5. Plug the USB cords into the computer
6. Turn on Bert (button is located on the right side of the machine).
7. Open the application on the desktop labeled: “**SMTMain -Shortcut**”
8. Please ensure the machine is clear of any obstructions and that hands are clear.
9. An on screen prompt will appear: “**Please CONFIRM to zero the machine**”. Select “**CONFIRM**”
 - a. NOTE: The machine will begin to move quickly. Make sure you are not in its path
10. Confirm cameras are working.
 - a. Choose the following to confirm cameras are working:
 - i. “**Diagnostics**” -> “**Move**”
 - ii. If the camera is not showing the silver of the machine, exit out of the program, turn off Bert, and unplug the USBs from the computer. Repeat steps 4 - 8 until you are able to see out of the camera.
11. Once cameras are working, click on the Green Back Arrow (located on the top right hand side of the screen, until you return to the main menu.
12. Select “**Run**” from the main menu.
13. Select “**SinglePartPlacement.dpv**” and then select “**Edit**”.
 - a. If you have multiple parts to place, skip to the bottom of the document (step 31)
14. Select the row with designator “**U1**”, and click “**Edit**”
15. Enter the X and Y coordinates of the pad location in the “**Coord. X**” and “**Coord. Y**” boxes. This should be the center of the pad.
 - a. Select “**Coord. Set**”
 - b. It will give you crosshairs, use the arrows in order to identify the center of the pad.
 - c. When content with the crosshairs, select “**Set**”.
16. Click the Green Back Arrow.
17. Click “**Save**”.

18. Select "**PCB Calibrate**" from the tabs.
19. Select "**Edit**"
 - a. In the "**Coordinate X**" and "**Coordinate Y**" boxes, enter the X and Y coordinates of the first alignment fiducial (in mm).
 - b. Repeat the above step for the second and third alignment fiducials.
20. Click on the Green Back Arrow.
21. Click "**Save**"
22. Select "**bbbbbb**"
 - a. Click on the green **PLUS** symbol above "**Mark 1**".
 - b. Align the crosshairs with the first alignment fiducial, be as accurate as possible. Click "**Save**".
 - c. Repeat this process for "**Mark 2**" and "**Mark 3**".
23. Click "**Save**"
24. Click "**MSTACK**"
 - a. Click once on the row of designator "**U1**"
 - b. Select "**EDIT**"
 - c. Select "**Coord. Set**".
 - d. Use the arrows in order to match the crosshairs with the center of the part.
 - e. Select "**Set**" when satisfied with the result.
25. Click the Green Back Arrow
26. Click "**Save**"
27. Click the Green Back Arrow.
28. Select "**Load**"
29. Select "**Run**"
30. When you are done, click the Green Back Arrow until you return to the main menu.
 - a. Click the red power button, unplug the cables, and turn off Bert.
 - b. Shut down the computer, and unplug the cart.
31. Select "**Add**"
32. Click on the row you just added.
33. Select "**Edit**"
 - a. "**Comp. ID**" should match which number part it is.
 - i. For example, if it is the second part to be placed, Comp. ID should be 2.
 - b. "**MSTACK**" should match the "**Comp. ID**".

- c. ***“Designator”*** should be ***“U#”***.
 - i. For example, if it is the second part to be placed, the designator should be “U2”
 - d. Enter the ***“Coord. X”*** and ***“Coord. Y”*** of where on the board it will be placed.
 - e. Use ***“Coord. Set”*** in order to place it as accurately as possible.
34. Click the Green Back Arrow.
35. Select ***“Save”***.
36. Repeat steps 31 -35 until you have the correct number of parts to be placed.
37. Return to step 17.