LaserMan / Repair Procedure

# LaserMan

* Copy the files to the Q drive in the corresponding folder
* Make sure the naming follows the following convention:
  + 14XX00XS\_STAGE\_R#
    - 14XX00X: Lot number i.e. 1433001
    - S: Substrate – P for PEN, S for Silicon, G for Glass and I for Polyimide
    - STAGE: Predefined stage code i.e. GPR, GE, STPR, STE, DPR, DE
      * NO RW, NO \_ASI\_ even if the recipe calls for \_ASI\_
    - R: Rework number. If not reworked it’s 01, 02 etc. If first rework, 11, 12 etc.
    - #: Panel number
* Make sure VPN is connected and Q drive has been accessed at least once. Just click on My Computer, then Operations drive and it should be enough.
* Run LaserMan by clicking the start menu button and typing LaserMan
* Select the folder of the lot with one click. Do not go deeper into the stage folders
* Select “Generate Necessary Files” from the menu
* Select “Panel” and “Optimize by Distance” (it should take a minute or two to finish, based on the file count). If it crashes it’ll let you know. It doesn’t just freeze.
* Exit the program if not doing anything else

# Laser Repair

* Load the panel to the stage, align to right
  + If it is a glass panel, it’s very likely that the right side is not completely flat. Make sure it’s all sitting on the stage by gently checking where the right alignment pin on the stage is.
* Turn the light on to 5 o’clock position (best lighting), and turn the laser power on
* Run the LaserRepair program if it is not already
  + If running for the first time, it’ll give a warning window. Just ignore it
* Open the “Orbotech Interface” by clicking on the empty icon on the toolbar.
* Load the file you’d like to work on. The files to load are named with a TNP at the end. Not the CSV files though, these data files have no extension.
* Make sure you are using the correct alignment setup.
  + You can check/change the alignment setup by going EDIT -> PARAMETERS -> ALIGNMENT SETUP
  + FDC39B/34 use [-125; 160.6] and [125; 160.6]
  + FDC39E use [-125; 169] and [125; 169]
  + FDC46 use [-125; 162.6] and [125; 162.6]
  + FDC48 use [-115.9; 142.583] and [134.1; 142.583]
  + FDC55 use [-129; 129.1] and [192; 129.1]
  + If the alignment marks are changed, then the camera will freeze. Press FREEZE icon (4th on the top) then LIVE icon (3rd on the top)
  + Although the alignment location has just been changed it is for calculations. So drive manually to the coordinate locations (Increase the drive speed to 2 which is stored in the preset 1 in the drive control window). After alignment is completed at both stations, change the drive speed to 0.15 stored in preset 2.
* Begin laser repair by clicking on “Next” on the “Orbotech interface” window.
* You’ll be out of focus. The first defect almost always needs to be focused using the down arrow.
  + PROTIP: You’ll be out of focus every time you move a big distance. If the microscope is going left, focus by using down arrow, and if the microscope is going right focus using the up arrow. If you ever see a kaleidoscope effect on the video while moving it means that it is too high. You’ll be able to focus by using the down arrow.
* Turn the laser controller on by turning the knob to “Start” position, pressing the green button, and turning the knob back to “Single shot”. It’ll still not shoot unless you change the other settings as well. So slightly change the X and Y aperture, lower the power by a unit or two. And move the camera in both X and Y if it still doesn’t shoot (and it probably won’t be).
* The preferred power for gate metal is 405. Might want to do higher for SDMetal repair. If there’s a large defect that needs to annihilated, feel free to increase it as much as necessary because if any metal is left it’ll probably get embedded and won’t be removed.
* If any line cut, or if there are any voids, open the corresponding CSV file and note it on the next two columns.
  + Column L should give the reason like R for repair line cut, V for void, D for damaged
  + Column M should write the number of line cuts
  + If cutting gate line on SD level, type gate on N column
  + Save the CSV file using the save icon and say YES to the message. When closing the file it’ll ask if you’d like to save it. Say NO for that one.
* If you’d like to save a screenshot of the defect, there’s a program installed called “Screen sniper” running in the background. All you have to do is expand the menu next to the clock at the right bottom and find the green square icon. Clicking on it takes the screenshot immediately. The pictures are automatically stored in Q:\Orbotech\Curtis Pictures