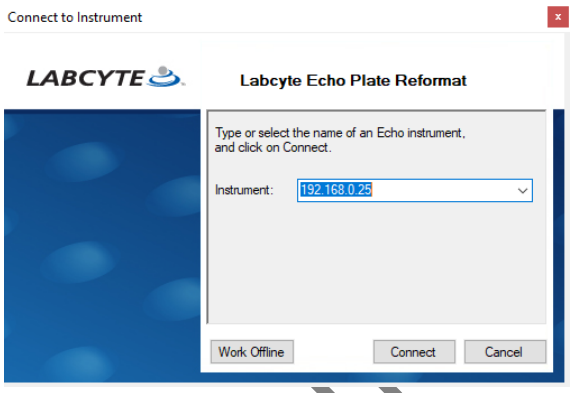
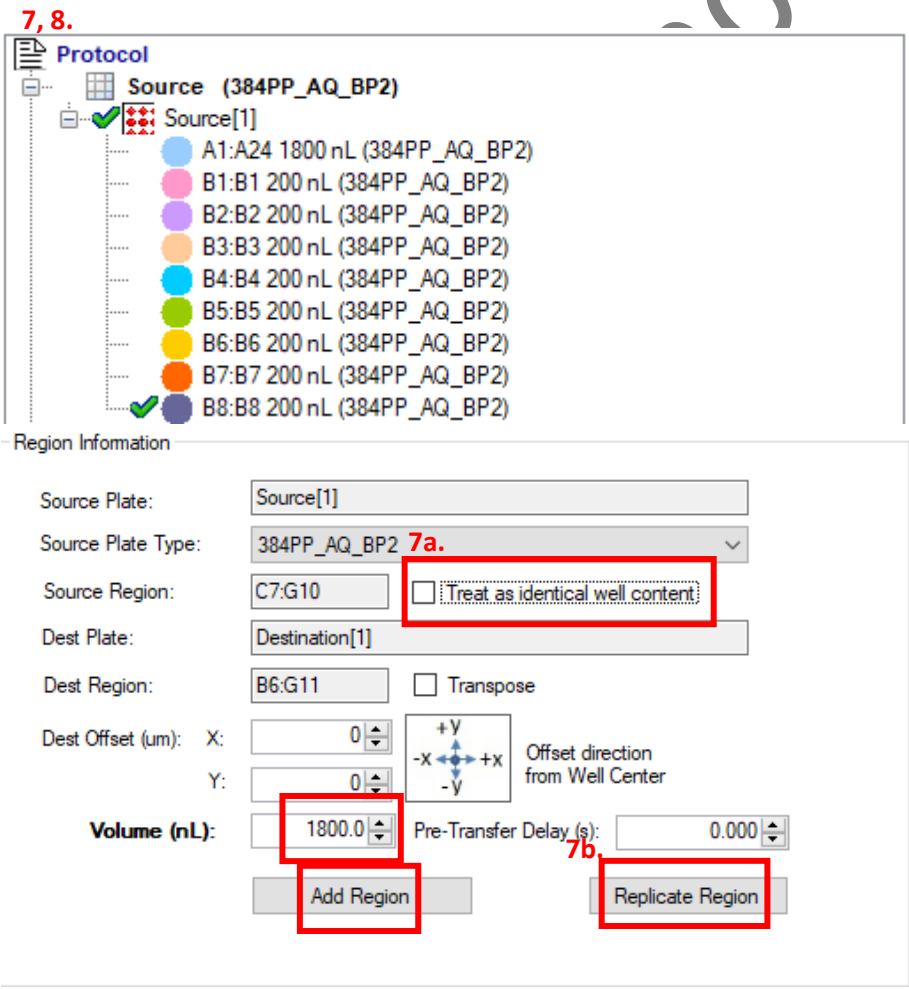
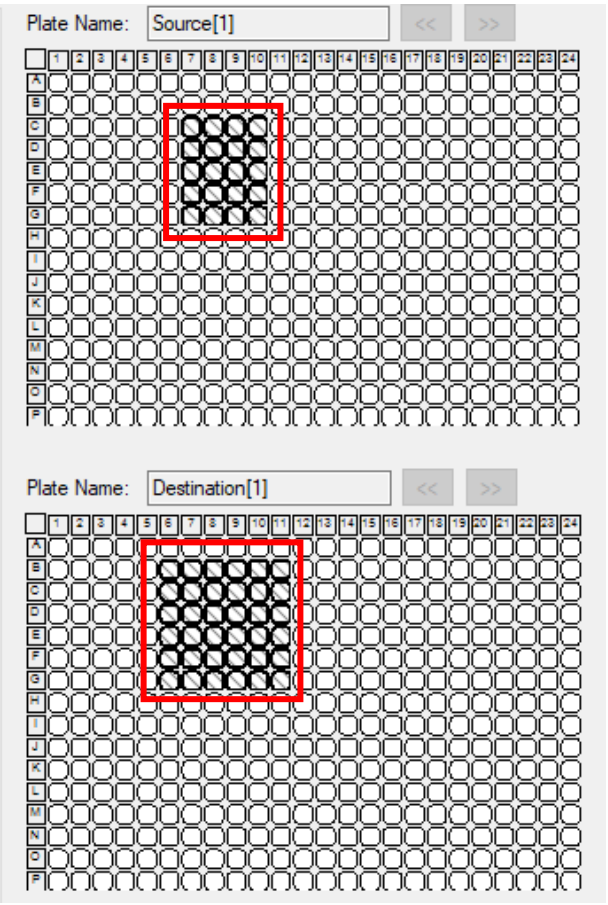
Labcyte Echo Liquid Handler
Standard Operation Protocol

Sample preparation and template setup

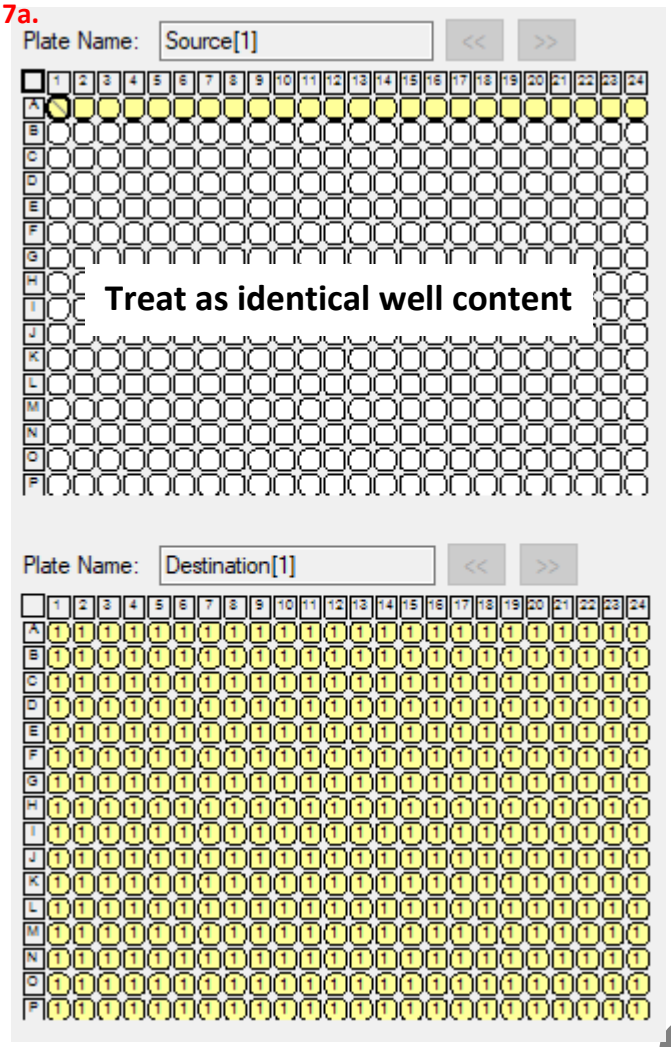


1. Sign on the log sheet before usage.
2. Prepare your samples in Echo sources plate (PP-0200, LP-0200).
   * Account for dead volume by referring to the Screening Calibration table.
   * Use the source wells by row can save time for transfer. (Much Faster!!!)
     E.g. Use whole row A before using row B
   * Plate can be reused by partially removing the sealing film with a cutter.
3. Centrifuge the plate at 3220 g (rcf) for 2-5 mins.
   * Repeat step 3. if any bubble or tilted liquid surface observed.
4. The system is always ON, check the monitor power if the screen is black.
   * Consult CPOS staff if any problem encountered.
5. To prepare the template, start the Echo Plate Reformat software and connect to instrument at 192.168.0.25
6. Click New (), select desired plate format and plate type for source and destination plates, and "Custom" mapping mode.
   * Refer to the Screening Calibration table in the appendix for the details of plate type setting.
7. Add transfer events by selecting region of transfer in both source and destination plates, and transfer volume.
   a. Check the box for "Treat as identical well content" if samples in source wells are the same.
   b. Click "Replicate Region" if samples in source wells are different.
      * The source region would be copied and pasted to fill up the destination region. (see the illustration in next page)
8. Check the dispense list before proceeding. Press Run () to continue.
9. Click "Simulate" to confirm the number of dispense per well.

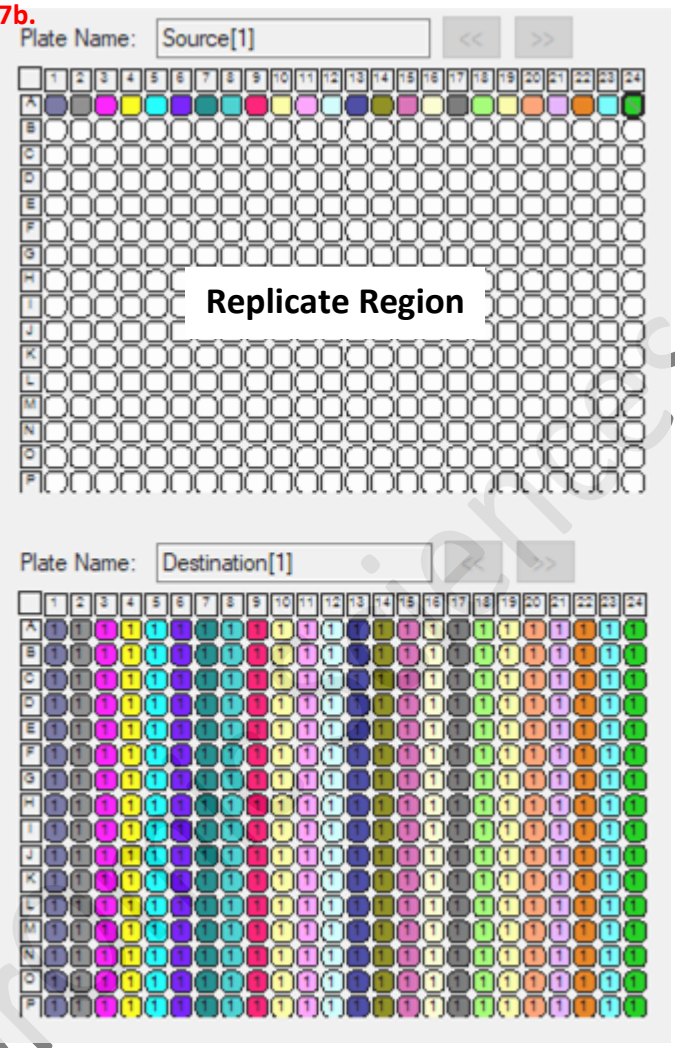




7a.

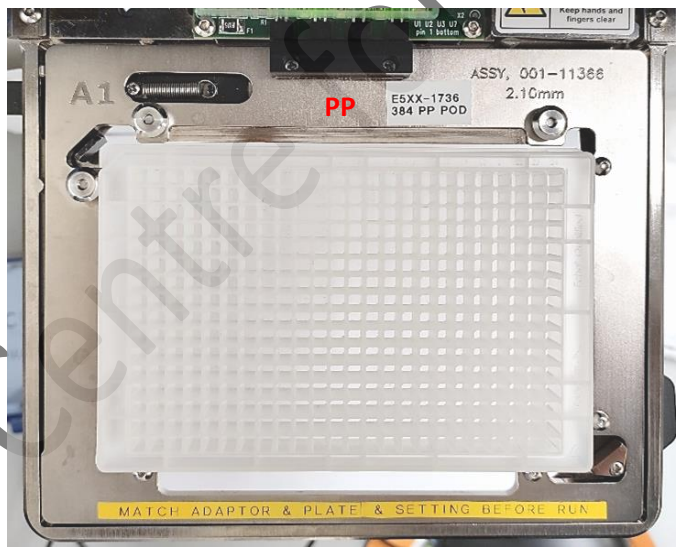


7b.



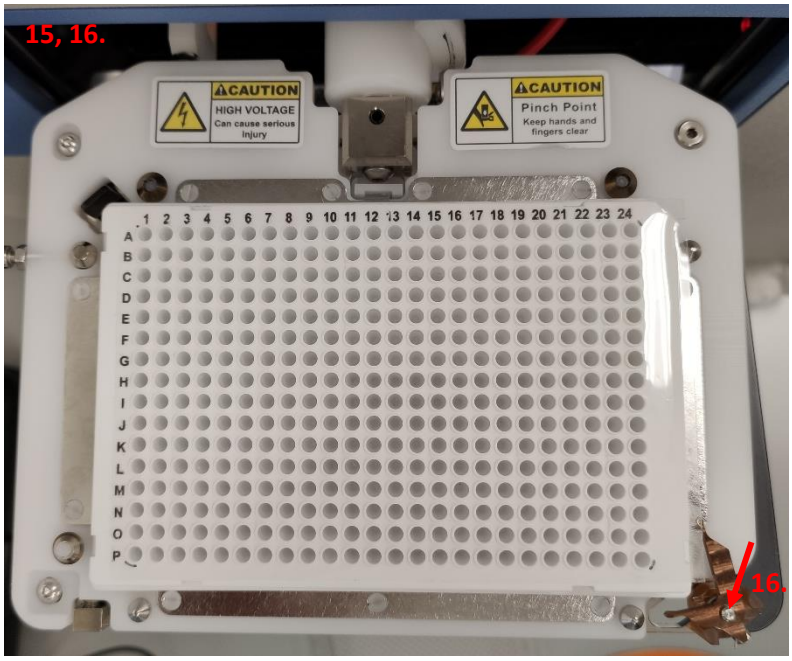
Start the run

10. Press Run ( ) again, "Run" and Start ( ) to start the run.
11. Check and match the plate adaptor (LDV or PP) with the plate.
12. Carefully put the source plate in the centre of the adaptor with a hand underneath to secure it from falling.



13. Check the sitting and make sure the plate is not tilted.
14. Click "OK" to proceed.

15. Carefully put the destination plate onto the plate holder after it is flipped.



16. Check the sitting and the pin of the gripper.
17. Click “OK” to start the transfer.
18. Collect the source and destination plates at once or else the reagents may dry out or the Echo door would be lost pressure. *Unattended plates would be put into the collection boxes.

Rerun for Exception and Exit

19. Go the “Labcyte Echo Exception Report” folder on the desktop and find the report according to date and time.
20. Deduce the reason of exception and identify the un-transferred well coordinates and volume.
21. If that is caused by insufficient reagent volume, pool the same reagent from multiple wells and re-import the new transfer protocol. (“picklist” excel program on the desktop can help to generate the revised transfer protocol).
22. Execute the new transfer.
23. Sign out the log sheet after usage.

Appendix

Calibration	Summary	Example fluids	Volume
384LDV_AQ_B	384LDV plate, buffer	Simple buffers: PBS, cell culture media without protein, cDNA, primers/probes	3-12ul
384LDV_AQ_P	384LDV plate, protein	Buffers, reagents containing protein (no surfactants), e.g. Enzymes, media w/protein, serum, antibodies.	6-14ul
384PP_AQ_SP2	384PP plate, surfactant/protein	Buffers, reagents containing surfactant (e.g. PCR mastermix, lysis buffers, reagents with Triton X-100, Tween-20, SDS, NP-40,etc.), with or without serum/plasma.	15-65ul
384PP_AQ_BP2	384PP plate, buffer/protein	Reagents without surfactants. Can contain DNA/proteins/serum/plasma. Solutions reported in % Glycerol (<30%).	15-65ul
384PP_AQ_CP	384PP plate, crystallography reagents, salts, etc.	Reagents without surfactants. MPD/PEGS/Osmotic solutions. Solutions reported in MRayl.	25-50ul
384PP_AQ_GP	384PP plate, glycerol+buffer/protein	Enzymes/Antibodies/Proteins stored in glycerol. Solutions reported in % Glycerol (15-55%).	15-65ul

Table for Screening Calibration.