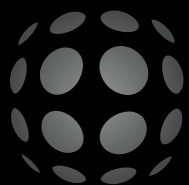


Echo® Software Applications

INTUITIVE CONTROL FOR ECHO LIQUID HANDLERS



Echo®
Array Maker



Echo®
Cherry Pick



Echo®
Combination
Screen



Echo®
Dose-
Response



Echo®
Plate Audit



Echo®
Plate
Reformat

Echo®

SOFTWARE APPLICATIONS

BROCHURE

Version 3.0 | JUNE 2018



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Echo® Software Applications

Echo Software Applications enable scientists to easily control Echo® Liquid Handlers and Access™ Laboratory Automation Systems. These applications are intuitive for user-friendly protocol creation and editing. Protocols can be simulated prior to running and support a variety of plate formats from 96 to 1536-well destination plates. Echo Software Applications can easily generate reports, customize plate layouts, and optimize fluid transfer sequences.

Echo® Plate Reformat

QUICKLY ASSEMBLE OR REFORMAT YOUR ASSAYS

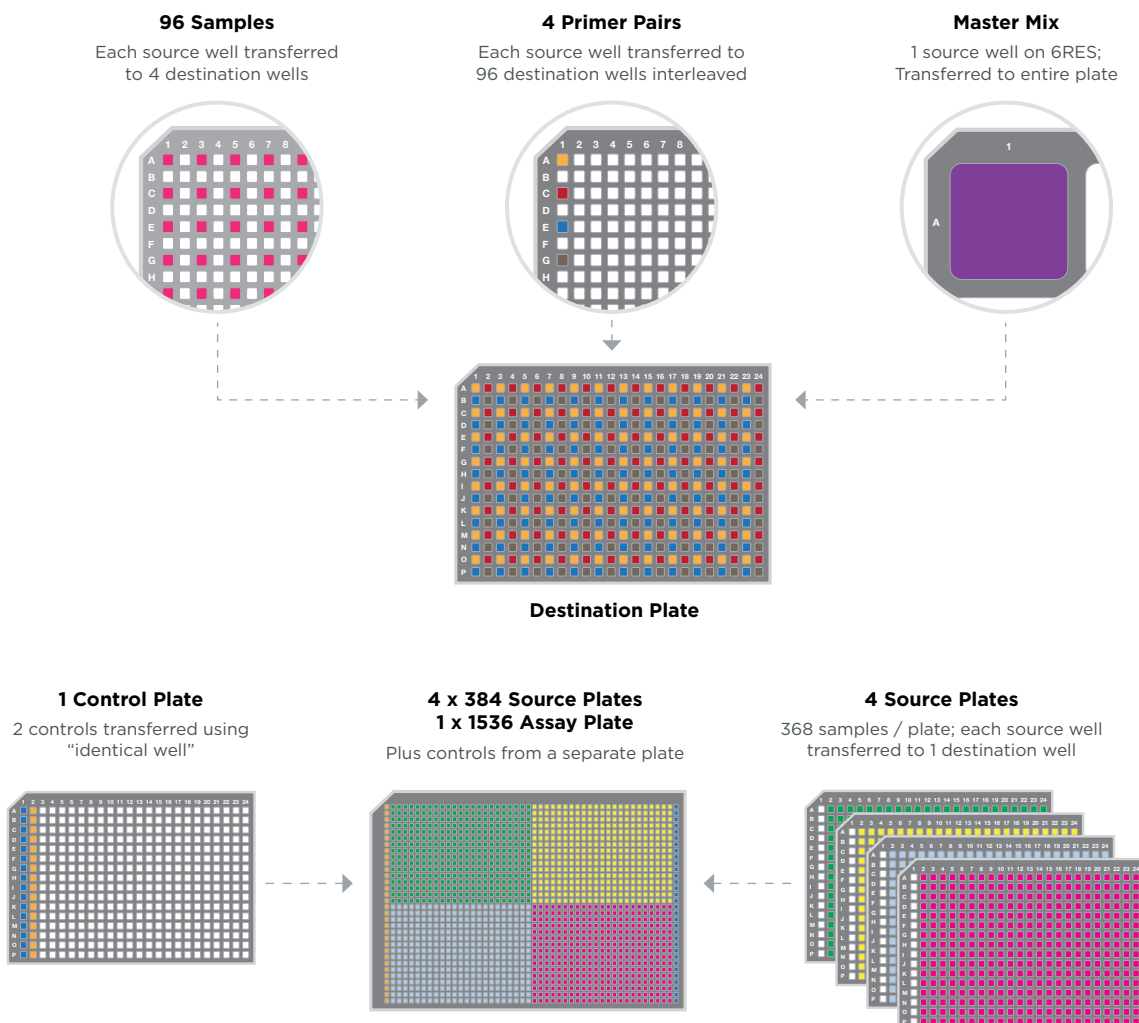


Easily setup designs for your assay plates

- ▶ Define transfer regions to create custom layouts
- ▶ Offset transfers to any position in a well
- ▶ Insert delays between transfers for incubations, settling, etc.
- ▶ Use multiple wells as one grouped source for larger volume transfers
- ▶ Replicate or reformat sample libraries in 384- and 1536-well formats to 96-, 384-, and 1536-well assay plates
- ▶ Compress libraries into interleaved patterns or separate quadrants

Design, develop, and assemble assays

Echo Plate Reformat software offers a variety of transfer functions to design custom layouts. Resulting protocols can be used to assemble assays or reformat and replicate screening libraries.



Echo® Cherry Pick

TRANSFER LIQUIDS FROM ANY SOURCE WELL TO ANY DESTINATION WELL

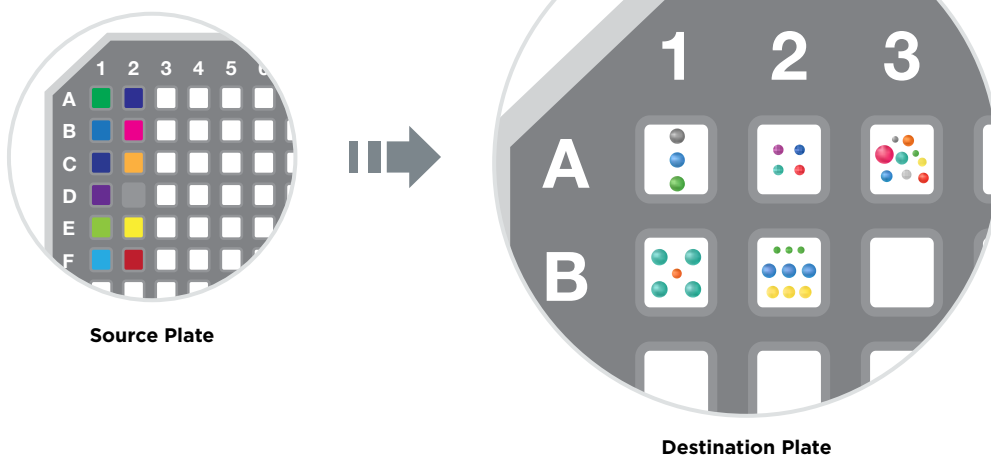
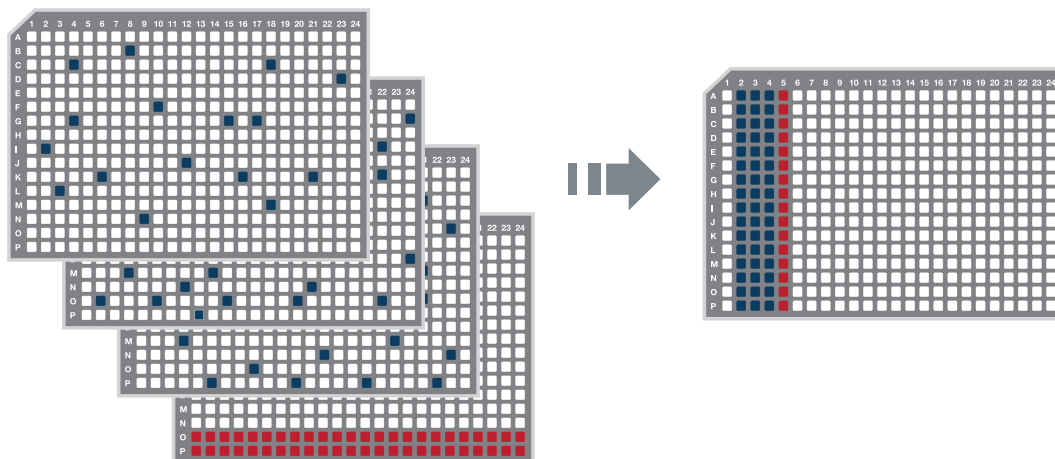


Rapid hit picking, sample pooling and more

- ▶ Automatic or explicit determination of destination plates and wells
- ▶ Customizable output files can be saved in XML, CSV, or TXT format
- ▶ Custom information is generated for LIMS tracking
- ▶ Import pick lists without re-arranging files
- ▶ Use a second pick list to transfer controls to all assay plates
- ▶ Visually preview each transfer
- ▶ Use one protocol to process any number of pick lists

Transfer from any well to any well using pick list files

Echo Cherry Pick software uses information in pick lists to automate from any source well to any destination well. Easily consolidate wells and pool samples from multiple plates into one plate.



Source Plate

Destination Plate

Echo® Dose-Response

IMPROVE YOUR DOSE TITRATION RESULTS



Reliable IC₅₀ determination starts with liquid transfers with exceptional accuracy

- ▶ Visualize curve layouts, starting concentrations, final concentrations and normalization requirements
- ▶ Produce row- and column-wise dilutions
- ▶ Replicate curves in adjacent wells, sequentially or across plates
- ▶ Automate normalization
- ▶ Import a pick list to identify samples for dilution
- ▶ Errors do not compound as in serial dilutions

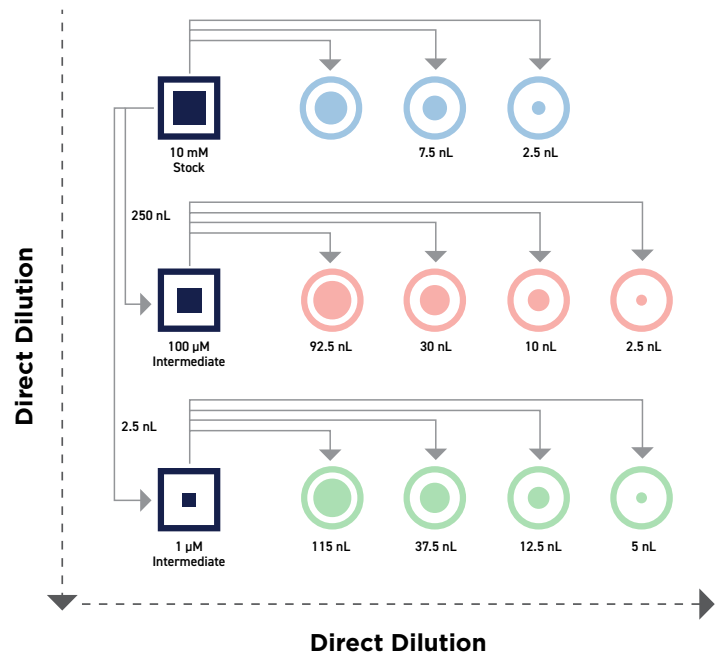
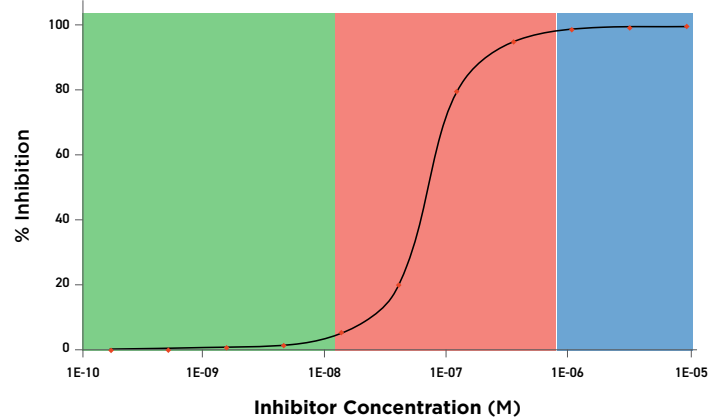
Eliminate carryover and improve results with Direct Dilution

Direct dilution is a precise method for generating drug concentrations used in dose-response experiments. As opposed to serial dilution, nano- and microliter volumes are transferred in direct proportion to the desired concentration. With tip-based liquid handling, direct dilution is often not practical or possible, and dilution using the serial method can lead to inaccurate results.

Assemble dose-response curves by directly transferring different sub-microliter volumes from one or more stock concentrations to achieve the desired final concentration at each point

Acoustic, non-contact transfer with Echo Liquid Handlers eliminates tips, carryover, and dilution errors.

Potency Assays with Direct Dilution



Echo® Combination Screen

SETUP COMBINATION SCREENS QUICKLY AND EASILY

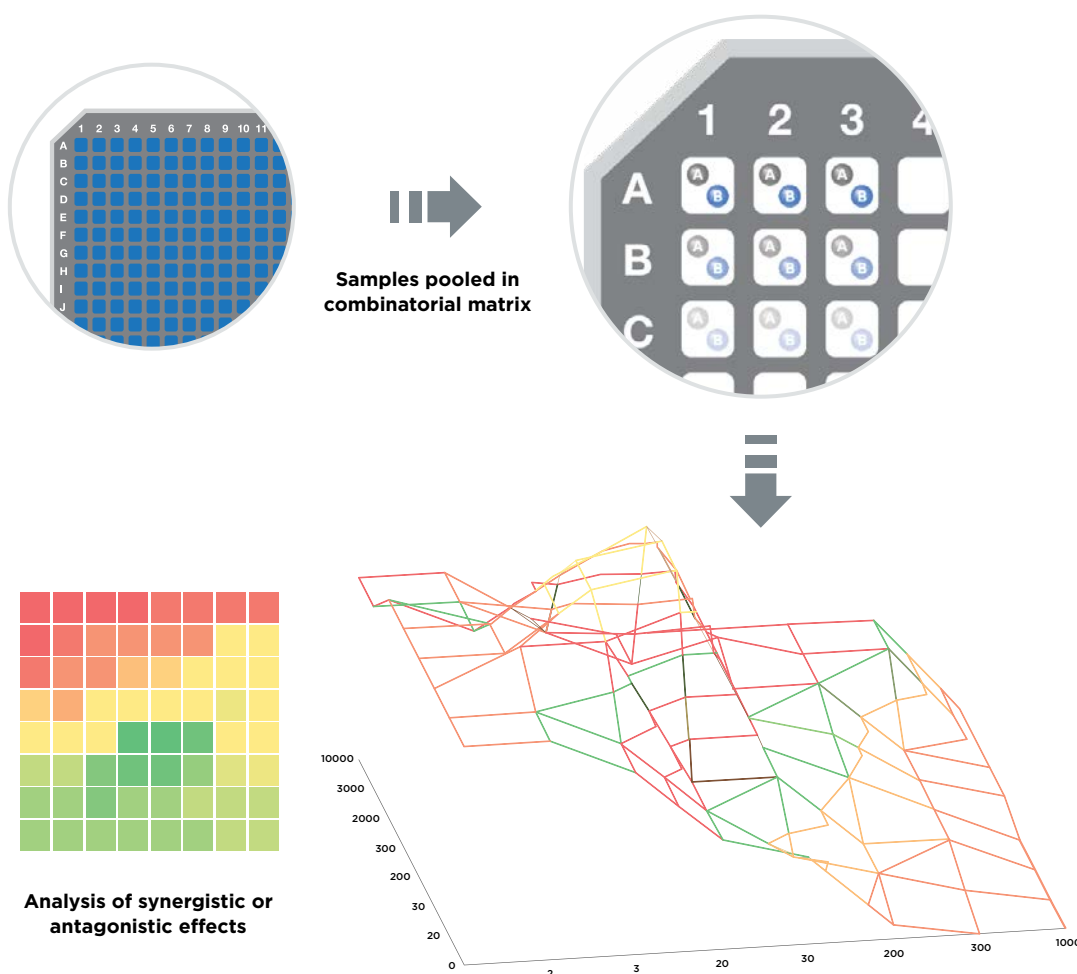


Combine curves of any format in 2D and 3D

- ▶ Design concentration curve layouts for use across protocols and systems
- ▶ Automatically generate curves from common input information: starting concentration, dilution factor, concentration points, number of controls, and concentration limits
- ▶ Apply multiple curves to plate layouts in row- or column-wise orientations with wrapping and replicates
- ▶ Use pick lists to map samples to curves in the final combination assay layout

Design complex combination screening layouts

When performing combination screens, the management of pick lists, transfer maps, and plate handling protocols become complex. The Echo Combination Screen software provides a graphical interface to visually combine dose-response curves, controls, and single concentration transfers into combination screening protocols.



Echo® Array Maker

COMPLETE CONTROL OF LIQUID TRANSFERS

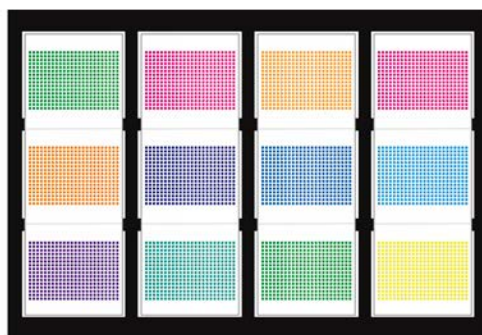


Monitor sample integrity

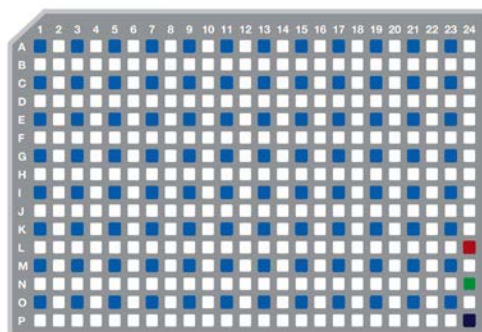
- ▶ Create custom destination formats for protein crystallography, MALDI, and more
- ▶ Share patterns across Echo systems
- ▶ Transfer to multiple arrays, multiple patterns within arrays, and multiple spots within patterns
- ▶ Import pick lists to set which samples are transferred to which pattern and spot

Transfer samples and reagents in user-defined formats

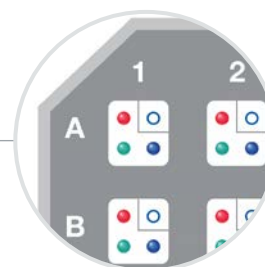
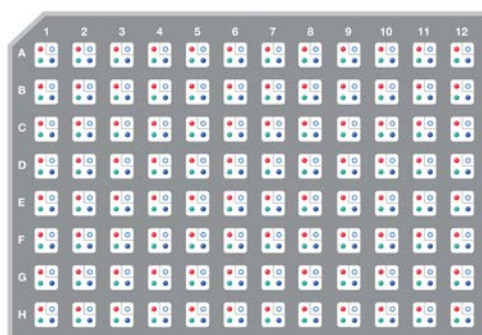
Echo Liquid Handlers have the ability to transfer samples and reagents from microplates to various formats in custom spotting-patterns. Echo Array Maker software enables users to graphically design custom patterns and formats.



The Echo can dispense liquids into slides and even custom destination formats.



With Echo Array Maker, you can quickly set up high-throughput crystallography screening plates.



Echo® Plate Audit

ACOUSTIC VALIDATION OF SAMPLE LIBRARIES

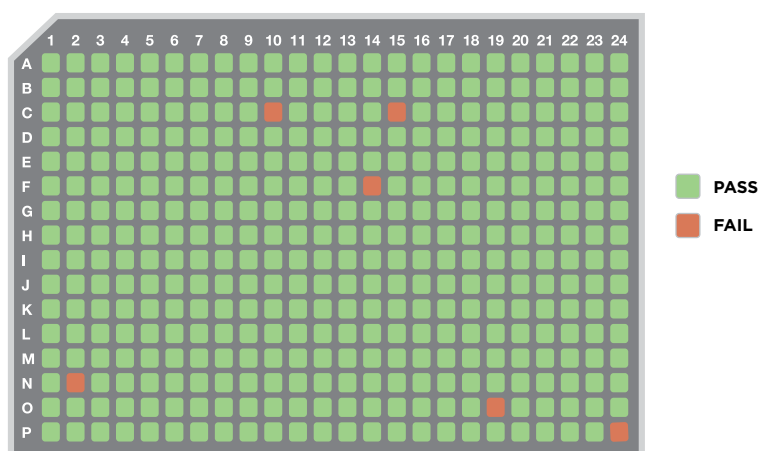
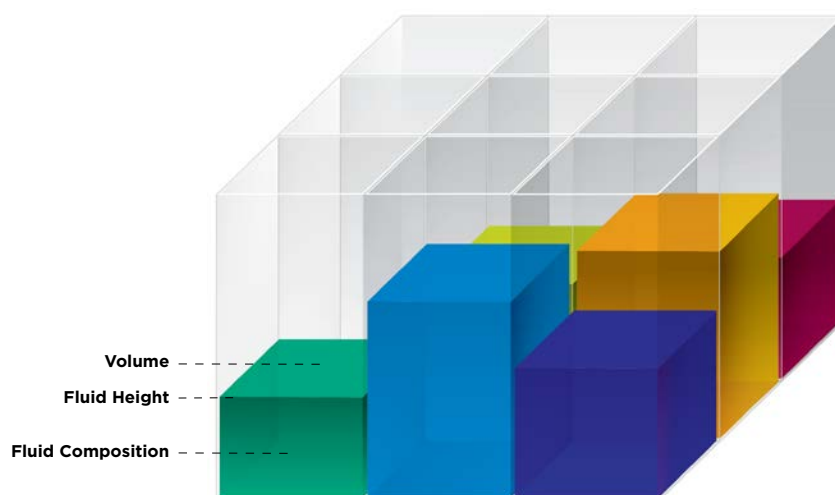


Measure and monitor sample characteristics

- ▶ View composition and volume of fluid in every well
- ▶ Identify changes in well composition or volume over time
- ▶ Set custom rules to designate plates as passing or failing
- ▶ Generate pick lists based on analysis results to select wells for transfer or replenishment
- ▶ Import passing/failing status into TEMPO™ Automation Control Software to automatically qualify plates for runs on the Access™ Laboratory Workstation

Analyze and monitor samples with acoustic analysis

Echo Liquid Handlers acoustically measure the characteristics of a sample or reagent prior to transfer. The Echo makes adjustments to the acoustic dispenses based upon the liquid characteristics to ensure accuracy and precision. Echo Plate Audit uses the same acoustic analysis to visualize, track, and compare the characteristics of samples within or across plates in a library over time.



Acoustic analysis of sample properties to validate and monitor sample libraries



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