

QATCH openQCM Real-Time SW Change Control Document

| Release Version | Date | Author | Description |
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| v2.6b1 | 06/18/2023 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Initial beta version for the v2.6 branch - Updated build information - Add traceback if error occurs during Back/Next step - Adjust smooth factor after 90s when downsampled - Adjust velocities for initial fill region [1/2, 1/1.5, 1/1] - Adjust shear_rate calculation to remove 'n' factor - Bug Fix: Read all available bytes from serial replies - Stop Temp Control even when locked on app exit - Bug Fix: Wait for TEC thread to quit when locking it - Switch order of version check during 'identify' cmd - Parse serial replies to 'identify' command to confirm - Bug Fix: Check for any() data in vector1 to end CAL - Add upgrade support for v2.6x builds from Dropbox - Move Temp Control stability checks for FW solely - Change TEC task update period from 3 to 5 secs - Bug Fix: Disable TEC task when changing modes |
| v2.6b2 | 06/23/2023 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information - Bug Fix: Temp Control task could hang main task - Include v2.5b46 in build for non-LCD hardware |
| v2.6b3 | 07/12/2023 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information - DevMode file moved to local data (persistent) - Warn if DevMode not enabled in new builds - Deduce smooth factor to 75% of what it was - Load icon made transparent, for disabled view - Analyze mode "Cancel" changed to "Close" - Advanced settings layout modified for usability - First and last dots greyed out in Analyze mode - Added table view to analyze results - Embed Figure 4 and table view in slider view - Allow for custom POIs by user in Advanced - Disable toolbar buttons when Analyze is busy - Removed debug traces from Analyze console - Improve warning and error messages - Add a cubic fit for the normalized plot - Reduce debug during lower mode interp - Add percent error and temperature to output file - Check CRCs of output files, delete duplicates - When downsampling, reduce plotting samples - Add Temp Control timeout after 15 minutes |

SW Changes

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| v2.6b4 | 07/18/2023 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information - Downsample plots to one in every 3 samples - Detect HW errors during FW checks - Bug Fix: Remove expiration date of DevMode - Rescan filesystem each load of Analyze mode - Add and remove runs from list upon file search - Remove debug messaging from file search - Add warnings if a timestamp cannot be parsed - Plot normalized curve fit as position on Figure 1 - Bug Fix: Flip avg viscosity from initial fill data - Bug Fix: Raise PermissionError if port open fails - Bug Fix: Temp set to 0.25 when set to 0.00 - Disable Temp Control timeout if DevMode on - Bug Fix: Temp Control does not stop if port busy - Add ability to define "release" builds in Dropbox - Only offer beta build updates if DevMode is on - Background color yellow on auto-off to read it - Disallow Temp Control if no device is connected - Bug Fix: Stop setting offsets if TEC update fails - Detect when device is open in another program - Disable mode-hopping by default (in Advanced) |
| v2.6b5 | 08/24/2023 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information - Get MEIPASS path from architecture when frozen - Replace 'progressbar' with custom implementation - Handle post-firmware update messaging better - Use 'progress mode' to do firmware progress bar - Pull resource files from MEIPASS path when available - Catch and report exceptions during Analyze runs - Suppress AutoGraph warnings from tensorflow - Use 'progress mode' for software download progress - Use the appropriate bundled splash screen per build |
| v2.6b6 | 09/12/2023 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information - Add 'rev' and 'err' to DEV_INFO in config data - Parse 'rev' from INFO command reply at FW check - Remove 'all_velocity' corrections for distances 2/3/4 - Moved creation of TECTask() in MainWindow init() - Force splitter set during initialization to set UI state - Verify user session is still active/valid once an hour - Add warning to stop run before Temp Control edit |

SW Changes

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| v2.6b7 | 09/17/2023 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information - Support for setting both TEMP_CAL factors in FW - Verify checksum from launch.bat for EXE builds - Cache set cal values in SW (once, not per device) |
| v2.6b8 | 09/25/2023 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information - Analyze table shows light red when too few points - Create CAL output file during Analyze in DevMode - Detect voltage error when Temp Control starts - Improvements to updater to detect bundle type - Ask user to ignore voltage errors if running old HW - BUG FIX: Batch number cannot be changed |
| v2.6b9 | 10/03/2023 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information - BUG FIX: Conflicting DEVINFO stales init/cal - Check for and resolve any conflicting device infos - Generate CAL file output when Analyze in DEVMODE - CAL file output messaging is INFO level (not red text) - Detect conflicted DEVINFO on port connect/change |

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| v2.6b10 | 10/10/2023 | A. Ross | <p>SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s</p> <ul style="list-style-type: none"> - Updated build information - FlasherX.log should be in logged_data folder in EXE - Find resource files relative to working path in EXE - Allow return of ALL params for given BATCH number - Keep track of step direction during Analyze points - Sort points of interest when opening Advanced view - Treat unused markers on right of plot as missing - After Step 2 sort all poi markers by timestamp - Move next marker ahead of last one if out-of-order - Skip over Steps that are for "unused" markers - Do not process skipped points on marker move - Store all found batch params in the audit XML file - Always apply 'CA_offset' regardless of input type - Add axes markers to Figure 1 top plot for readability - Remove debug traces from Figure 1 top plot PDF - Modify calculation of 15MHz high shear datapoint - Update resource files to v3, 2023-10-10 - Support update checks for resource files - Retain build type "_py" vs "_exe" in folder name - BUG FIX: Pull auto calculated values when editing - Highlight manual parameter entries in Run Info - Show a "reset" button for manual Run Info entries - Default contact angle for non-water solvents is 55 - Require audit signature if batch number now found - Indicate batch 'found' bool in audit XML file - Warn if save or close Run Info with bad batch num - Update SW unbundled version to Python 3.10.11 |
| v2.6b11 | 10/11/2023 | A. Ross | <p>SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s</p> <ul style="list-style-type: none"> - Updated build information - BUG FIX: High-shear calculation off when 'bad' points - Support flexible array formatting in params lookup file - Use 'all_times' to keep point index order when 'bad' - Refer to 'all_times' instead of 'times' to reference IDX - BUG FIX: Update resource files (see flexible format) - Catch errors extracting resources, still check server - BUG FIX: Download SW zips relative to install folder - Do not extract SW zips relative to working directory - Suppress "Checking entries..." warning in Run Info |

SW Changes

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| v2.6b12 | 10/31/2023 | A. Ross | <p>SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s</p> <ul style="list-style-type: none"> - Updated build information and resources - Support for updating multiplex devices - Show progress bar during FW updates - Set 'ethernet_speed' to 3ms for multiplexing - Support multiplex plotting within Worker class - Calibration class uses a single ParserProcess - Support multiple data streams within Serial - Support for multiple plots within MainWindow - Add Multiplex section to Advanced Settings - Pre-query device info for unknown ports at boot - Show progress bar during SW updates - Specify minimumSize of main layout windows - BUG FIX: Auto sign-out failed to revert to login - Add advanced setting "Auto-detect channel count" - Do not print duplicate log messages to console - Refactor get_web_info() to start_download() - NOTE: Multiplex devices are not fully supported |
| v2.6b13 | 11/03/2023 | A. Ross | <p>SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s</p> <ul style="list-style-type: none"> - Updated build information and resources - Additional support structures added for multiplex - Firmware update support for multiplex devices - Indicate "Checking device firmware version" at end - Remove 20% and 40% initial fill points from results - Add 30% error bars to high shear rate calculations - Retain 20% and 40% in the calibration output file - Calibration only supports single device for now*** - Serial adds initial support for multiplex file writes - BUG FIX: Ignoring voltage issues stops FW task - BUG FIX: Do not ask user for FW updates on boot - BUG FIX: Indicate session expired on auto logout - Modify Temp Control slider range from 8 - 40 C - NOTE: Multiplex devices are not fully supported |

SW Changes

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| v2.6b14 | 11/10/2023 | A. Ross | <p>SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s</p> <ul style="list-style-type: none"> - Updated build information and resources - Only indicate SW update as successful on last one - Modified Surface Tension calculation in Analyze - Modified initial samples drop as max of 5 or (y / 30) - Removed 1.1*DENSITY*300 limitation from Analyze - BUG FIX: Error may occur when generating CAL file - Treat exception on port open as a failure in Serial - BUG FIX: Do not show "up-to-date" if user says no - Query temp offsets when setting advanced configs - Look for KeyStore dynamically for update queries - BUG FIX: Show set temp offsets, never "0" (if set) - On session expiration, persist error message on UI - NOTE: Multiplex devices are not fully supported |
| v2.6b15 | 11/28/2023 | A. Ross | <p>SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s</p> <ul style="list-style-type: none"> - Updated build information and resources - Get Device returns the most recently modified PID - Primary put into bootloader when updating PID devs - Max speed 20ms/sample when running in multi-mode - Allow for graceful thread close, only terminate if need - Several Analyze bugs fixed causing analyze failures - Calibration refactored to support multiple serial devs - Add support for read_all() to the Device processor - Add support for read_until() to the Device processor - Refactor Serial.py to support multiple serial devices - Allow for multiple Run Info windows after multi run - Prevent 'config' folder stagnation on PID change - Force re-write DEV_INFO file on change of PID - Send a 'MULTI INIT 0' to refresh LCD on PID change - Get age of calibration returns the oldest age for multi - Concentration supports float text format, not just ints - BUG FIX: Some "auto" values are shown as "manual" - NOTE: Multiplex devices are FULLY SUPPORTED |
| v2.6b16 | 12/12/2023 | A. Ross | <p>SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s</p> <ul style="list-style-type: none"> - Updated build information and resources - Improved parsing of "INFO" cmd on update check - Variable MAX SPEED parameters for single vs multi - Log USB serial number only on get_source_ports() - BUG FIX: Analyze can throw error if len(visc) is off - Improved parsing of initialization data streams - Indicate on LCD Initialize result: PASS/ERROR/FAIL - Log USB serial number only on query new dev info - Clear MSGBOX on LCD when user clicks "Reset" - BUG FIX: Updating _py installs creates nested dir - Added support for plate configuration on multiplex |

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| v2.6b17 | 12/19/2023 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Update from using Python 3.10.11 to 3.11.7 - Refactor code to align with Python 3.11 syntax - Initialize sweep runs from 2.5MHz to 17.5MHz - Initialize results only expects to find 2 peaks now - Resend STREAM on multi if device does not start - Correctly log ambient temperature on multi runs - Clear MSGBOX on primary device only for multi - Reconstruct curve for multi runs with common X - Reduce plot printing for multi devices for speed - Queue TEC state during multi runs to update UI - Process serial bytes one line at a time, not 1 byte - Silently ignore serial lines that do not start with "Q" - Remove debug log about stopping serial streams - Refactor to allow mode hopping with 2 modes only - Disable Plate Configuration button during runs - Only print temperature data from primary device - Make Plate Configuration button a square on UI |
| v2.6b18 | 01/05/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - BUG FIX: Multiplex COM detection can get stuck - Base overtone frequency changed from 50 to 25 - BUG FIX: Multiplex only measures 1st mode - Report PID when logging found device config - PY launcher creates symbolic link for logged data |
| v2.6b19 | 01/15/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - BUG FIX: Multiplex devices sent wrong frequencies - Auto-detect delimiter of batch params resource file - Apply polynomial correction to initial fill when t > 1s - Calibration and Serial passed wrong index for multi - Multi hopping missing base overtones per cycle - Batch params delimiter changed from tab to comma - Combine amplitude plots during multi measurements |

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| v2.6b20 | 01/23/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Prevent selection of uninitialized devices - Add ability to tune PID controller in Constants.py - Correctly set icon on Plate Configuration window - Skip non-existent folders when exporting runs - Add error when looking up device info post run - Check for and remove calibration file in config root - Send TUNE parameters to device on TEC start - Parse new line in TEMP reply with PID parameters - Add new warning text with PID tuning parameters |
| v2.6b21 | 02/06/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Retuned PID parameters in Constants.py |
| v2.6b22 | 02/13/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Added Analyze params to Constants.py to model - Added improved AI data modeling to Analyze - Auto-calculate POIs and jump to Summary - Allow user to "Modify" POIs to manually edit - Add Band-Aid #2 to drop more initial fill points - Comment out lines referencing "disabled" icons - Add icon 'modify.png' for use in Analyze mode - Add model 'ModelData.py' for use in Analyze |
| v2.6b23 | 02/21/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Revised 'avg_in', 'step_size', 'track_width_db' - Changes to ModelData to improve point placement - Increase difference factor to 2.0 all of the time - Run model after Step 1 and Step 2 of Analyze - Added 'MM231106_W7' to batch parameters v11 |
| v2.6b24 | 02/22/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - BUG FIX: Model data not processing long runs >90s - BUG FIX: New points not applying if model fails |

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| v2.6b25 | 02/26/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - BUG FIX: Analyze not asking for secondary audits - BUG FIX: Analyze errors if output or CAL file fails - BUG FIX: Clear marker flags on Back button press - BUG FIX: Do not do smoothing if too few fill points |
| v2.6b26 | 02/27/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - BUG FIX: Improve model detection of end-of-fill - BUG FIX: Ignore model partial fill if given stop point - BUG FIX: Trust ch1 more than 80% fill point if 'bad' |
| v2.6b27 | 03/01/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Revert step_size and track_width_db - BUG FIX: Exit point selection is too early |
| v2.6r27 | 03/05/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Release candidate build equivalent of v2.6b27 - BUG FIX: Patch issue with install path of updates |
| v2.6b28 | 03/13/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Extend developer mode expiration to 90 days - Modified Surface Tension and Contact Angle formulas - Band-Aid #2: Change thresholds to 15% and 40% - Increase decimal resolution of Surfactant to 5 - Prevent scientific notation in XML for small numbers |
| v2.6r28 | 03/13/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Release candidate build equivalent of v2.6b28 |
| v2.6b29 | 03/19/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Added option: Only ADMIN can update SW/FW - BUG FIX: Never offer B-build to R-build EXE - BUG FIX: R-build gets 'stuck' on run if no device |

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| v2.6r29 | 03/19/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Release candidate build equivalent of v2.6b29 |
| v2.6b30 | 04/09/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Add "hid" module to project requirements - Renamed icon "analyze.png" to "advanced.png" - Added icon "user.png" - Remove strict dependency on "tensorflow" for AI - Add support for HID-compliant serial devices - Use ModelData() to determine good/bad runs - Rename "Info" button to "Run Info" in Analyze - Change "Analyze" icon from gear to start button - Add user icon and name to right side of toolbar - Change "Advanced settings" from text to button - Add support for Help Tutorials in docked sidebar - BUG FIX: Analyze fails if run length ~90 secs - Show relevant Help Tutorials based on app state - BUG FIX: Baseline coefficients are wrong (multi) - Search for HID devices when scanning USB ports - Indicate "Press start then apply drop" to user - Add "View Tutorials" to Help dropdown menu - BUG FIX: Software update check was freezing UI - Add filesystem configuration checks at startup - Add tutorial configuration logic at startup - Indicate "Drop applied!" in SW during measure - Do not preload "tensorflow" unless it is needed - BUG FIX: Cannot reliably clear PID to FF once set - Add ability to show tutorials on application start - Refactor "app_publiser" to "app_publisher" - Show error details if setting active device fails - Add support for using TyUpdater for FW updates |
| v2.6b31 | 04/11/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - BUG FIX: SW freezes on run with Temp Control on - BUG FIX: FW update "fails" on COM->HID update - BUG FIX: Hide popup window made by tyUpdater - Report friendly name when doing "Identify" calls - Detect and reassign port if it changes after update - Always use HID 'write_timeout' to avoid app hang - Only close HID port if it was previously opened - Check and open HID port if written to while closed - If using "no" timeout, set it to a max of 15 seconds - If port switches from COM to HID, close serial port - NOTE: Downgrade 'scipy' module to 1.12.0 (buggy) |

SW Changes

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| v2.6b32 | 04/18/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - BUG FIX: Hide console flashes on app boot - BUG FIX: Runs near 90 secs still cause error - If Analyze load fails, allow manual point selection |
| v2.6b33 | 05/13/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - New Dropbox keystore to allow file uploads - Remove 'platform' dependency from mainWindow - BUG FIX: Error during filesystem configuration - Check for 'targets.csv' when doing SW updates - Add 'subprocess' as global import in mainWindow |
| v2.6r33 | 05/13/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Remove strict dependency on "tensorflow" for AI - Add support for HID-compliant serial devices - Use ModelData() to determine good/bad runs - Add user icon and name to right side of toolbar - Add support for Help Tutorials in docked sidebar - BUG FIX: Analyze fails if run length ~90 secs - Search for HID devices when scanning USB ports - Indicate "Press start then apply drop" to user - BUG FIX: Software update check was freezing UI - Add filesystem configuration checks at startup - Indicate "Drop applied!" in SW during measure - Refactor "app_publiser" to "app_publisher" - Add support for using TyUpdater for FW updates - Report friendly name when doing "Identify" calls - If Analyze load fails, allow manual point selection - Check for 'targets.csv' when doing SW updates |
| v2.6b34 | 05/17/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Add Factory Restore Defaults - Add Global AppSettings - Add "Apply Drop Now" to Plot UI - Add "Calibrating..." and "Press Stop" to Plot UI - Remember which Plots are enabled in View menu - Remove unused 'targets' from 'build' in updater - Don't offer dev_mode B-builds an R-build update - Always clear plot status message on stop - Check both frequency and dissipation y_range |

SW Changes

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| v2.6b35 | 05/21/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Add temp adjusted factor to CA in Analyze - Track "run finished" during measurements - Compare plot limits to baseline deltas - Show "waiting on other channels..." until ALL done |
| v2.6r35 | 05/13/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Add Factory Restore Defaults - Add Global AppSettings - Add "Apply Drop Now" to Plot UI - Add "Calibrating..." and "Press Stop" to Plot UI - Remember which Plots are enabled in View menu - Remove unused 'targets' from 'build' in updater - Don't offer dev_mode B-builds an R-build update - Always clear plot status message on stop - Check both frequency and dissipation y_range - Add temp adjusted factor to CA in Analyze - Track "run finished" during measurements - Compare plot limits to baseline deltas - Show "waiting on other channels..." until ALL done |
| v2.6b36 | 05/23/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Reducing the fill region cut-off from 0.15-0.4 to 0.1 - The correction for viscous materials is disabled - Breakout 'default_diff_factor' to constants.py - Revert 15MHZ high-shear viscosity calculation |
| v2.6r36 | 05/23/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Reducing the fill region cut-off from 0.15-0.4 to 0.1 - The correction for viscous materials is disabled - Breakout 'default_diff_factor' to constants.py - Revert 15MHZ high-shear viscosity calculation |

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| v2.6b37 | 05/27/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - BUG: Resolve requirements while honoring any constraints put on other module dependencies - Reduce CA offsets for protein formulations to from 7 and 5 to 5 and 3, respectively - BUG: SW updates not working in SW v2.6r36_exe due to improper version of 'requests' module for 'dropbox' API to work (constraint not honored) - Remove "Press Stop" from Plots UI until improved - BUG: Only call to '_dbx_connection' if it exists - BUG: Set a default value to 'res_download' if none - Update UUIP in targets database if it has changed - BUG: Only launch EXE after an update if the checksum verification passes - Show expected checksum while calculating actual - Remove inaccurate text from EXE launcher script - Offer to update local Python environment after updating requirements file |
| v2.6r37 | 05/27/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - BUG: Resolve requirements while honoring any constraints put on other module dependencies - Reduce CA offsets for protein formulations to from 7 and 5 to 5 and 3, respectively - BUG: SW updates not working in SW v2.6r36_exe due to improper version of 'requests' module for 'dropbox' API to work (constraint not honored) - Remove "Press Stop" from Plots UI until improved - BUG: Only call to '_dbx_connection' if it exists - BUG: Set a default value to 'res_download' if none - Update UUIP in targets database if it has changed - BUG: Only launch EXE after an update if the checksum verification passes - Show expected checksum while calculating actual - Remove inaccurate text from EXE launcher script - Offer to update local Python environment after updating requirements file |

SW Changes

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| v2.6b38 | 06/07/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Initial support for GitHub update engine - Add progress bar when updating resource files - Make Amplitude plot for MULTI not clip at edges - Stop MULTI measurement run in FW on Stop in SW - Changes to Plots UI status label to work on MULTI - BUG FIX: Apply correct limits to plot2 for ch1 and 4 - Do not adjust contact angle if 'concentration' < 1 |
| v2.6b39 | 06/17/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Narrow left and right bounds avoid overscanning - Warn user if they may experience tracking issues - Break multiple Run Info UIs into combined window - Only ask for one run name for entire multiplex run |
| v2.6b40 | 06/25/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Log errors to console during DEV_get_active() - 20x baseline for mode hopping - Increase sampling speeds for fast filling datas - Set 'temp_adjusted_CA_factor' to zero - ModelData throws exceptions that hard-stop - ModelData reports excessive warnings - Use a constant 72.0 for ST during Analyze - Hide user prompts and views of ST in Run Info - CA offsets based on 'concentration' removed - BUG FIX: Allow runs to analyze when 90 secs - Incorporate new QModel for point prediction - Revise shear rate calculation from prior builds - Hide p-points outside of +/-10% of visc-region |
| v2.6b41 | 06/28/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Add MODEL parameters to constants.py - Remove unused import from ModelData - Baseline from 0.5 - 2.5 secs in ModelData - Allow models to be disabled from constants.py - Disable the new QModel predictor until it is refined - Add option to bundle XGBoost.dll into compiled EXE - Revert existing modules to their v2.6b39 versions |

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| v2.6r41 | 06/28/2024 | A. Ross | <p>SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s</p> <ul style="list-style-type: none"> - Updated build information and resources - Initial support for GitHub update engine - Add progress bar when updating resource files - Make Amplitude plot for MULTI not clip at edges - Stop MULTI measurement run in FW on Stop in SW - Changes to Plots UI status label to work on MULTI - BUG FIX: Apply correct limits to plot2 for ch1 and 4 - Do not adjust contact angle if 'concentration' < 1 - Narrow left and right bounds avoid overscanning - Warn user if they may experience tracking issues - Break multiple Run Info UIs into combined window - Only ask for one run name for entire multiplex run - Log errors to console during DEV_get_active() - 20x baseline for mode hopping - Increase sampling speeds for fast filling datas - Set 'temp_adjusted_CA_factor' to zero - ModelData throws exceptions that hard-stop - ModelData reports excessive warnings - Use a constant 72.0 for ST during Analyze - Hide user prompts and views of ST in Run Info - CA offsets based on 'concentration' removed - BUG FIX: Allow runs to analyze when 90 secs - Incorporate new QModel for point prediction - Revise shear rate calculation from prior builds - Hide p-points outside of +/-10% of visc-region - Add MODEL parameters to constants.py - Remove unused import from ModelData - Baseline from 0.5 - 2.5 secs in ModelData - Allow models to be disabled from constants.py - Disable the new QModel predictor until it is refined - Add option to bundle XGBoost.dll into compiled EXE - Revert existing modules to their v2.6b39 versions |
| v2.6b42 | 07/09/2024 | A. Ross | <p>SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s</p> <ul style="list-style-type: none"> - Updated build information and resources - Remove speed limit on multiplex runs - Add scan.png to icons for Run Info - Move QueryRunInfo from popUp.py to runInfo.py - Show run name from XML not from path name - Add "Rescan" button to Analyze UI to update runs - Release handle earlier when renaming output files - Call new RunInfoWindow for multiplex runs - Add support for barcode scanning batch number - Add support for renaming runs in Run Info view - Add support for storing Notes in Run Info view |

SW Changes

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| v2.6b43 | 07/26/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Update to latest QModel version - QModel predict on by default - Apply High Shear correction factor - Hide initial fill points when >1.25x - Add shear correction to resources - Updates to Plate Configuration - Do not identify if no port available - Confine multiplex plots to 1-4 - Allow PID from 1-4 and A-D, 0xFF - Do not start TEC task if no port |
| v2.6b44 | 07/30/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Use ST = 60 when concentration > 20mg/ml - Simplify limits on initial fill trendline check - Check the point_factor_limit is valid - Increase debug messaging for initial fill trendline check - Add region limits to QModel predict of CH1 and CH2 - Use QModel for all points except for the first point |
| v2.6b45 | 08/01/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Use ST = 60 when concentration > 5mg/ml |

SW Changes

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| v2.6r45 | 08/01/2024 | A. Ross | <p>SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s</p> <ul style="list-style-type: none"> - Updated build information and resources - Remove speed limit on multiplex runs - Add scan.png to icons for Run Info - Move QueryRunInfo from popUp.py to runInfo.py - Show run name from XML not from path name - Add "Rescan" button to Analyze UI to update runs - Release handle earlier when renaming output files - Call new RunInfoWindow for multiplex runs - Add support for barcode scanning batch number - Add support for renaming runs in Run Info view - Add support for storing Notes in Run Info view - Update to latest QModel version - QModel predict on by default - Apply High Shear correction factor - Hide initial fill points when >1.25x - Add shear correction to resources - Updates to Plate Configuration - Do not identify if no port available - Confine multiplex plots to 1-4 - Allow PID from 1-4 and A-D, 0xFF - Do not start TEC task if no port - Use ST = 60 when concentration > 20mg/ml - Simplify limits on initial fill trendline check - Check the point_factor_limit is valid - Increase debug messaging for initial fill trendline check - Add region limits to QModel predict of CH1 and CH2 - Use QModel for all points except for the first point - Use ST = 60 when concentration > 5mg/ml |
| v2.6b46 | 08/18/2024 | A. Ross | <p>SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s</p> <ul style="list-style-type: none"> - Updated build information and resources - Updated userguide to latest version - Tread PIDs A-D as secondary devices - DevMode expires after 365 days, was 90 days - DevMode will persist across different versions - Import/export notes.txt for each run (if set) - Allow "Don't ask again" at sign (DevMode only) - Ask to renew DevMode after expired at sign-in - BUG FIX: User must provide run name for multi - Rename new tool script "clear tokens" |

SW Changes

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| v2.6r46 | 08/18/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Updated userguide to latest version - Tread PIDs A-D as secondary devices - DevMode expires after 365 days, was 90 days - DevMode will persist across different versions - Import/export notes.txt for each run (if set) - Allow "Don't ask again" at sign (DevMode only) - Ask to renew DevMode after expired at sign-in - BUG FIX: User must provide run name for multi - Rename new tool script "clear tokens" |
| v2.6b47 | 10/03/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Update SavedModels for latest QModel - Invert difference curve if drop applied to outlet - Add beta support for new AI Point Selection Tool - Use QMultiModel for providing more point guesses - See HISTORY.md in QATCH-ML for model changes |
| v2.6b48 | 11/01/2024 | A. Ross | SWEEP PERFORMANCE: FW: 1.5-7.5ms E2E: 1.5-7.5ms CAL: <2s <ul style="list-style-type: none"> - Updated build information and resources - Update to QModel v2.0.6 - Improved AI support for long runs > 90 secs - Prevent out-of-order POIs 4 and 5 predictions - Improve POI 6 predictions with more adjustment - Add 3 parameters to constants for drop effect - Add drop effect option to Advanced Settings - Reload active run when turning on/off drop effect - Apply drop effect diff_factor and vector offset |