Release Note
DQ24 Series Internal Software
SightV1.3.0

---- 26 June 2025

Algorithm Version (V0.2.23)

New Features

- **Consumable Detection Camera Update**

  A new camera model has been adopted for consumable detection. The software maintains compatibility with the previous camera model.

- **Level Sensor via Image Recognition**

  The level sensor now determines leveling status by capturing the position of the bubble in the spirit level. The UI remains the same.

- **Leveling Image Parameters Configuration**

  Under administrator privileges, users can now configure camera parameters for the bubble level image (e.g., position, exposure, gain) to optimize image quality.

- **Temperature Control Update**

  Temperature control is now only enabled after the target temperature is set.

- **Dust Fan Logic**

  The Windows version adds dust removal fan control logic, with configuration options (e.g., speed, path) accessible under administrator privilege

- **Droplet Camera Upgrade**

  A new droplet imaging camera (Toup20000) is now supported, in addition to legacy models (ASI1600, ASI294, Toup45000)

- **Crosstalk Correction Support**

  Crosstalk compensation files are now built-in and exported with experiments. Only compatible dye configurations may apply corresponding matrices

- **Double-Click Axis Features**

  On histograms: toggles between log and linear scale.
  On 1D plots: allows editing axis range and filtering out droplets beyond the range.

- **Exposure Time UI Setting**

  Exposure time for specific targets can now be set directly in the assignment interface. This setting overrides dye-specific exposure time settings.

- **Overexposure Detection**

  If the number of saturated droplets in a well exceeds a defined threshold, the well is marked as overexposed (similar to 'exclude')

- **Droplet Generation Path Customization**

Administrators can configure different droplet generation paths by adjusting consumable length according to working mode or firmware waveform selection

- **Flexible Needle Grouping for Droplet Generation**

  Droplet generation no longer requires tips to be in exact alignment with consumable reaction plate positions. As long as the number of tip groups matches the number of experimental groups, the experiment can proceed.

- **Pre-Experiment Air De-Bubble**

  Device now automatically performs air de-bubble before each experiment to prevent bubbles in droplet oil.

- **Light Window Capture Feature**

  A new configuration allows enabling/disabling light window exposure during imaging, along with exposure time settings

- **Crosstalk Matrix Import and Selection**

  Crosstalk matrices can now be imported and selected in the Settings interface. The selected matrix filename is displayed in the setup interface and will apply during experiment processing.

- **Sight Air De-Bubble Reminder**

  If air de-bubble has not been performed within 14 days, a reminder dialog will appear upon software launch.

- **Time Zone Labeling Optimization (Linux Only)**

  Time zone label updated from "Asia/Shanghai" to "Beijing, Chongqing, Hong Kong, Urumqi".

- **TEC Hardware Adjustment**

  Due to TEC hardware changes, temperature control time has increased. Countdown accuracy has been improved accordingly.

- **Thermal Duration Warning**

  A prompt will appear before the experiment if expected runtime exceeds 3 hours.

- **Startup Thermal Self-Test Enhancement**

  Thermal self-check during startup now uses the same criteria as in experiments. Configurable thresholds, temperature, and sampling frequency are now open to administrators.

- **FFU Activation Strategy**

  FFU (fan-filter unit) now activates under multiple conditions: power-on, lid open/close, and experiment start. Fan activation duration is configurable by administrators.

- **Tips Removal Delay Configuration**

  Added configuration to define the wait time between tips removal and lid pressing.

- **Assignment Interface Optimization**

  Fluorescence channel display area expanded.

- **Thermal Profile Export Enhancement**

  Exported Sight result table now includes complete thermal profile.

- **Operating System Migration**

  Software has migrated from Linux to Windows environment.

- **Consumable Calibration UI Update**

  Updated QGraphicsView size to match image proportions.

- **Brightness Inheritance During Upgrade**

SPRD channel brightness in upgraded software now inherits Channel 1 value, ensuring compatibility across versions before and after v1.1.0.

- **Exported Software Version Logging**

  version.txt: stores software version used during experiment run.
  exportversion.txt: stores software version used during data export.

- **Version Rollback Logic Adjustment**

  Version rollback will overwrite all records created in the newer version, including:
  Device licenses, experiment logs, operation logs, config changes, user management data, system logs, and imported files (e.g., reagent kits, crosstalk matrices).

- **Auto Deselect Wells After Assignment**

  1. After assigning sample names to wells, previously selected wells are automatically deselected.
  2. Same applies after assigning targets.
  3. Sample renaming also triggers deselection.
  4. Sample list auto-scrolls to focus on active sample.

- **QcParams.ini Export Support**

  Now included in exported experiment data packages.

- **PDF Export Password-Free on Windows**

  Exported PDFs no longer require password for printing.

BUG Fixes

- **Log File Overwriting Across Days**

  Resolved issue where Sight logs from the previous day were being overwritten.

- **Missing Upgrade Record in Logs**

  Fixed lack of upgrade event logging in the operation record for version 1.3.0.

- **Low Power Mode Locking UI**

  Fixed issue where system entered low-power mode during active alert windows and became unresponsive to touch.

- **Min/Max Concentration Label Translation**

  Corrected improper translation of concentration.

- **Missing Content in PDF Export (Operation Logs)**

  Resolved bug where PDF export of operation logs resulted in blank content.