Improvements in ZetaStar™ Firmware

Introduction

This document highlights the most important enhancements, changes, and bug fixes made to the ZetaStar firmware. Please contact us at www.wyatt.com/contact if you have any questions or suggestions.

Contents

Revision History

Each version of the ZetaStar firmware includes a corresponding version of the DYNAMICS Touch onboard software. Refer to the Improvements in DYNAMICS Touch document for detailed information on the changes included in each release.

1.2.1.109

New Features

- Includes DYNAMICS Touch 3.1.0.148.
- Added: Automatic laser tuning at startup now adjusts laser drive current to keep laser output in the optimal range, helping reduce low-monitor alarms and extend usable laser lifetime during normal operation. (S-31710)
- Added: Zeta Potential measurements in Flow Mode now automatically select the best voltage for unknown samples and use an improved analysis method to deliver more reliable results across a wider conductivity range. (S-32692, S-28078)

Bug Fixes and Miscellaneous Changes

- Fixed: Zeta Potential measurements now consistently set laser power to 100% at the start of the measurement, preventing runs from using a lower power setting. (D-28043)
- Fixed: Improved cuvette and Cell ID detection reliability across startup, reboot, and installation scenarios. ZetaStar now consistently recognizes the ZDC cuvette type during restart, preventing intermittent startup check errors. Cuvette detection reliably initializes and activates after reboot or firmware/software installation, eliminating false “No cuvette detected” messages. Cell ID readings are now stabilized so values no longer momentarily appear incorrect during adapter or cuvette insertion/removal, updating only after the signal is steady. (D-31457, D-28289, D-22836)
- Fixed: Improved very low E-Field current accuracy so measured values now much more closely match the requested setting, reducing the offset errors. (D-27841)
- Fixed: Reset to factory defaults now preserves Security Pack data-collection and USB export lockout states, so collection remains disabled after reset and reboot when previously locked out. (S-32833)

1.2.1.63

New Features

- Includes DYNAMICS Touch 2.1.3.34.

1.2.1.58

New Features

- Includes DYNAMICS Touch 2.1.2.8.

Bug Fixes and Miscellaneous Changes

- **Fixed:** The “Optical Fiber Switch Error” alarm can be falsely triggered during startup. (D-28535)

1.2.1.43

New Features

- Includes DYNAMICS Touch 2.1.1.2.
- **Added:** Support for the auxiliary alarm out connector on the back panel (if available on your specific instrument). (S-26785)
- **Added:** A high severity alarm when the Zeta Module Temperature control is disconnected or malfunctioning. (S-24055)
- **Added:** A high severity alarm when the Optical Bench Temperature control is disconnected or malfunctioning. (S-24056)
- **Added:** A high severity alarm when the Optical Fiber Switch control is disconnected or malfunctioning. (S-23797)
- **Added:** Startup checks for the DAC to detect a failing or failed DAC. (S-26982)

Bug Fixes and Miscellaneous Changes

- **Changed:** General improvements have been made to informational and error logging to enable better debugging and support. (S-26277, S-26274)
- **Changed:** The max temperature for an unknown cuvette, or when cuvette detection fails, is set to 45 °C. (S-25426)
- **Fixed:** The laser is no longer incorrectly forced ON after it is shut off due to the laser temperature going outside the acceptable range and then returning. It will now remain ON or OFF depending on its previous state. (D-26081)
- **Fixed:** The first few temperature readings after a reboot can be incorrect. (D-24149)

1.2.0.5

Bug Fixes and Miscellaneous Changes

- **Fixed:** The power button may stop working if the instrument does not initialize properly on startup. (D-27622)

1.2.0.1

New Features

- Includes DYNAMICS Touch 2.1.0.2.

1.1.0.426

New Features

- Includes DYNAMICS Touch 2.0.1.164.

Bug Fixes and Miscellaneous Changes

- **Added:** New laser monitor alarms to indicate when laser is stabilizing. (S-23949)
- **Changed:** Changed the Zeta Module Overheat alarm to turn off the electronics when overheating and turn them back on when the temperature returns to a safe range. (S-23546)
- **Changed:** Removed some unnecessary startup checks causing false alarms during instrument startup. (S-23546)

1.1.0.411

New Features

- Includes DYNAMICS Touch 2.0.1.146.

Bug Fixes and Miscellaneous Changes

- **Fixed:** Startup check threshold for cuvette detection is too high and can falsely trigger startup check alarms. (D-23729)

1.1.0.410

New Features

- Includes DYNAMICS Touch 2.0.1.142.

Bug Fixes and Miscellaneous Changes

- **Fixed:** Startup check alarm can be incorrectly triggered during startup. (D-23607)

1.1.0.409

New Features

- Includes DYNAMICS Touch 2.0.1.140.
- **Added:** New RF Detector Alarm. (S-23168)
- **Added:** PI Scan is enabled at startup. (S-19302)

Bug Fixes and Miscellaneous Changes

- **Changed:** Laser power is set to 0% when idle. (S-22810)
- **Fixed:** Cuvette detection can fail if cuvette is repeatedly inserted. (D-22997)

1.1.0.361

This is the initial release of the ZetaStar firmware.