TSQ Series II 5.1 Release Notes

These release notes outline new features, describe resolved issues, and highlight known issues that remain in the Thermo Scientific™ TSQ™ Series II 5.1 Instrument Control Software.

The instrument control software is used to collect high-quality mass spectrometry data and consists of the Tune and Method Editor application packages that enable control of the instrument.

- The Tune application continuously displays acquired mass spectra and sequentially reports observed values of various instrument parameters, indicating instrument status. It is used not only for viewing spectra but also for tuning and calibrating the instrument for maximum performance across various scan types, scan modes, ion polarities, scan rates, and resolution settings. Additionally, the application offers a range of diagnostics functions for troubleshooting, along with features for managing USB-connected devices, such as the external divert valve and syringe pump. It also supports report generation, allowing you to document the results of diagnostics, calibrations, and optimizations.
- In the Method Editor application, you can set up experiments using a full range of scan types, advanced filters, and conditional logic to design customized scan sequences for complex sample analysis. Additionally, the Method Editor application allows you to integrate peripheral device controls into your experiments. Methods created in the Method Editor application can be executed in high-level applications such as the Thermo Scientific™ Xcalibur™ data system.

For additional information, see the following topics:

- Features
- Supported instruments
- System requirements
- Resolved issues
- Known issues

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Features

The TSQ Series II 5.1 Instrument Control Software includes the following new and improved features:

- Installation support for the Thermo Scientific™ TSQ Altis™ Plus model
- Hardware support for the Chemyx™ SKE10 syringe pump
- Offline mzCloud mass spectral library updates and support
- FlexMix solution calibration support

Supported instruments

The TSQ Series II 5.1 Instrument Control Software supports the following Thermo Scientific™ triple-stage quadrupole mass spectrometers:

- TSQ Certis™
- TSQ Altis™ Plus
- TSQ Quantis™ Plus
- TSQ Fortis™ Plus

System requirements

The following table outlines the minimum hardware and software requirements.

NOTE:

- Local administrator privileges are required to install Thermo Scientific software.
- If you are upgrading from Windows 10 to Windows 11, contact Thermo Fisher Scientific Technical Support for assistance.
- Software testing was limited to the scope of the provided configuration.
- The Chromeleon™ software compatibility matrix outlines verified compatibility between instrument control software versions, Chromeleon software versions, and instrument models.
  For more information or to access the compatibility matrix, go to support.thermoinformatics.com/downloads/default.aspx, and select **Chromeleon** → **Chromeleon** → **Related Drivers** → **Driver Compatibility Matrix**.

Table 1 System requirements

System	Requirements
Computer	• 3.1 GHz Intel™ Quad-Core processor • 16 GB RAM (32 GB recommended) • 1 TB hard drive • Two Ethernet gigabit network ports • DVD-ROM drive • Monitor display resolution of 1920 × 1080
Software	Microsoft™ Windows™ 10 Enterprise LTSC 2021 *Requires the following Thermo Scientific™ software:* • Foundation 3.1 SP10 • Xcalibur™ 4.7 SP1 • FreeStyle™ 1.8 SP2 QF1 • SII for Xcalibur 1.8 or 1.10
	Microsoft™ Windows™ 11 Enterprise LTSC 2024 *Requires the following Thermo Scientific™ software:* • Foundation 3.1 SP11 • Xcalibur™ 4.8 or later • FreeStyle™ 1.8 SP3 QF1 • SII for Xcalibur 1.9 or 1.10

Resolved issues

The following table lists defects that were resolved in the instrument control software. Each entry includes an Item ID (the internal reference number) and a brief abstract description of the issue. These issues were addressed by engineering fixes and subsequently verified through follow-up testing by the product evaluation team.

NOTE: The information excludes Help-related issues and cosmetic fixes. In some cases, the abstract descriptions have been modified or expanded from the original reports to more accurately reflect the reported issues.

Table 2 Resolved issues

Item ID	Description
913075	The system crashes with a TNG library read failure when the user navigates between Method Editors that use different instrument models in Chromeleon (for example, Orbitrap Exploris and TSQ Altis).
774170	The TSQ Quantis Plus with an older SRIG RF PCB reports an SRIG RF out-of-range error.
943761	Compound optimization crashes when the syringe pump reaches its mechanical stop.
943757	Compound optimization crashes when the Autosampler is selected as the injection method and no MS^1 level optimization is selected.

Known issues

Discrepancies in the software documentation are reported as known issues. The following items are not included in the list of known issues:

- Issues lacking sufficient information to reliably reproduce the reported problem.
- Software feature requests, regardless of their significance or severity. These requests are evaluated by the product management team for consideration in future releases.

NOTE: Follow these general recommended recovery guidelines, as applicable:

- Reinstalling the instrument control software or operating system should not be used as a general troubleshooting method.
- Restart the instrument control software to address general connectivity issues.
- Restart the data system computer to resolve issues encountered during data acquisition.
  - Devices showing an error state may also require a power cycle to restore normal operation.
- Contact Thermo Fisher Scientific Technical support for assistance, if needed.

The following table describes the terminology used to define the severity levels of known issues.

Table 3 Severity levels

Severity	Description
Critical	A critical issue that renders the system unusable, either due to the complete failure of a function with no available workaround or because continued use compromises data integrity or leads to data loss. Critical issues also encompass significant, non-obvious quantitative errors as well as any concerns related to human or instrument safety.
High	A serious issue that does not compromise data integrity—such as data loss, corruption, or incorrect results—but impacts the user's ability to use the product as intended. It may stem from a functional failure, design flaw, or a documentation error or omission. A workaround may not be available.
Medium	A minor issue or less-than-ideal behavior in a product feature, typically with an available workaround.
Low	An issue with minimal impact on use of the product; including defects so subtle that users may never notice them, as well as ease-of-use concerns or other items that do not affect performance.

The following table lists the known issues in the instrument control software. Each entry includes an Item ID (the internal reference number), severity level, and a brief abstract description of the issue. Some issues include a remedy, if applicable.

Table 4 Known issues

Item ID	Severity	Description
872547	Low	When you select File > Validate Method, the Method Editor workstation does not validate the source type or other hardware-configurable items. **Workaround:** Ignore the validation results for the source items. Save the method, then open it on a connected instrument. The validation updates correctly.
859903	Low	In negative polarity mode, the Spray Voltage readback does not display a negative (-) sign. **Workaround:** Check the polarity setting in the Tune application. If the polarity is Negative, interpret the displayed Spray Voltage as a negative value.
847417	Medium	In the Method Editor, loading a template can generate an incorrect error if the method duration was previously set to a value that is shorter than the duration specified in the template. **Workaround:** After loading the template, adjust the method duration.
845216	Medium	In the Tune application, selecting the Centroid/Profile setting on the Define Scan tab does not apply the selected setting. **Workaround:** Change the Centroid/Profile setting on the Ion Source tab.
827010	Medium	In Compound Optimization, selecting Reset restores all options to their default settings but does not clear the table. **Workaround:** Clear the table manually.

Item ID	Severity	Description
633105	Low	Diagnostic reports use underscores (_) instead of decimal points (.) in numeric values.
749899	Low	Raw data file headers for scans that use collision energy ramps display only the starting collision energy.
793387	Low	SRM compound optimization results display a different number of decimal places than other library entries.
751358	Medium	When the Autosampler injection mode is selected in the Tune application, selecting a method with or without a wash cycle opens the report folder instead of loading the method. **Workaround:** Close the window, then reselect the methods.
771153	Medium	The TNG Console is not restored from the Windows system tray. **Workaround:** Open the TNG Console from the Windows Start menu.
359910	Low	In the Tune Console, the display names for RFA1 and RFA2 both refer to the RF amplifier for Q3.
927990	Medium	In the Tune application, a warning may indicate that no sweep cap is detected. On the By Board tab, the sweep cap type may display as None even when the OptiSpray sweep cap is installed. Detecting the sweep cap as "None" instead of "OptiSpray" does not affect instrument performance or data acquisition.