



Thermo Scientific

# Skant™ Software for Microplate Readers

## Release Notes

Software Version 7.0.2

2022

**thermo**  
scientific

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## Overview

With SkanIt™ Software, you have full control over the instrument settings for all your Thermo Scientific™ microplate readers. SkanIt Software supports optimal use of the instrument features, and offers visual workflow setup and effortless data reduction and exporting. The operation is simple and straightforward, even for more complex assays and applications. SkanIt Software is available in two editions: a Research Edition (RE) for scientists working in life science research, and a Drug Discovery Edition (DDE) with features for compliancy with FDA 21 CFR Part 11.

SkanIt Software is a PC control software for Thermo Scientific microplate readers:

- Thermo Scientific™ Varioskan™ LUX Multimode Reader
- Thermo Scientific™ Multiskan™ SkyHigh Spectrophotometer
- Thermo Scientific™ Multiskan™ Sky Spectrophotometer
- Thermo Scientific™ Multiskan™ FC Photometer
- Thermo Scientific™ Fluoroskan™ FL Fluorometer and Luminometer
- Thermo Scientific™ Fluoroskan™ Fluorometer
- Thermo Scientific™ Luminoskan™ Luminometer
- Thermo Scientific™ Multiskan™ GO Spectrophotometer (discontinued model)

The latest SkanIt Software version 7.0.2 will automatically replace any existing version 6 or 7 series SkanIt Software. If the PC has older SkanIt Software versions, those remain in the PC as before. The new SkanIt Software version will install parallel to those older SkanIt Software versions.

This document lists the most important new features and fixed/remaining anomalies of SkanIt Software version 7.0.2. The lists do not cover all issues, only those that are considered to be the most relevant ones.



## SkanIt Software 7.0.2 Release Notes

### SkanIt Software 7.0.2 New Features

SkanIt Software version 7.0.2 does not have any new features compared to the previous SkanIt Software version 7.0.1.

### SkanIt Software 7.0.2 Anomalies Fixed

Compared to SkanIt Software 7.0.1, two software anomalies have been fixed in SkanIt Software version 7.0.2:

- We have noticed that when some new Windows updates related to .NET Framework 4.8 are installed into the PC, a third-party software component that is used inside SkanIt Software may become unstable. This can cause several different error situations during SkanIt operations. This third-party software component has been updated to a new version in SkanIt Software 7.0.2.
- It was not possible to run the Multiskan SkyHigh firmware upgrade from the SkanIt installation package as planned. This was caused by an incorrect installation of a required system driver. The driver installation has been redesigned in SkanIt Software 7.0.2. As a result, it is now possible to upgrade the Multiskan SkyHigh firmware using the SkanIt installation package.

### SkanIt Software 7.0.2 Residual Anomalies

There are no new residual anomalies in SkanIt Software 7.0.2 compared to older SkanIt Software 7 versions.





## SkanIt Software 7.0.1 Release Notes

### SkanIt Software 7.0.1 New Features

The following new features have been implemented in SkanIt Software version 7.0.1:

- The System Audit Trail of the SkanIt Drug Discovery Edition can now be exported to a pdf file in addition to an xml file as in previous versions. This makes the System Audit Trail easy to read and analyze (Human readable).

### SkanIt Software 7.0.1 Anomalies Fixed

A few critical SkanIt software version 7.0 bugs that were recognized since the launch have been fixed in SkanIt 7.0.1.

- When the extrapolation function in logistic curve fits (4PL, Log-logit, custom logistics or 5PL) was activated in SkanIt 7.0, this extrapolation happened in the standard curve display, but extrapolation was not calculated to the results due to a software error. SkanIt 7.0.1 calculates the extrapolated results correctly.
- When a Kinetic calculation or a Spectral analysis step was added, and such calculation type was selected that the resulting data was still of kinetic or spectral type, this result data type was lost by SkanIt 7.0. This caused the results to be reported as a list of numbers instead of a kinetic curve or spectra. SkanIt 7.0.1 now recognizes the data type correctly and displays proper kinetic curves or spectra as the result. This same error was also present in the Merge step.
- The measurement order type 6 was incorrectly displayed in SkanIt 7.0 and therefore the actual measurement was not executed as expected. SkanIt 7.0.1 displays different measurement orders correctly.

### SkanIt Software 7.0.1 Residual Anomalies

There are no new residual anomalies in SkanIt 7.0.1 compared to SkanIt 7.0.



# SkanIt Software 7.0 Release Notes

## SkanIt Software 7.0 New Features

The following new features have been implemented in SkanIt Software version 7.0 (compared to SkanIt Software 6.1.1):

- SkanIt Software 7.0 is designed and fully tested to be compatible with 64-bit Windows 11 operational system.
- Two SkanIt Software editions have been clearly separated from each other:
  - Research Edition (RE) has a file-based data management system that makes it easy to store data securely to local drives, network drives or even to cloud-based file-sharing services.
  - Drug Discovery Edition (DDE) offers features for compliance with FDA 21 CFR Part 11. It uses an integrated database system for data storage for maximal data security and traceability.
- SkanIt Software 7.0 has a special troubleshooting tool than can be used to generate a troubleshooting package to help supporting the user in possible problems and issues.
- SkanIt Software 7.0 has a new modern visual look and display color themes.
- The SkanIt Software 7.0 robotic automation interface has been re-designed to support the latest SILA2 standard.
- A new SkanIt IQOQ tool has been integrated to all microplate reader IQOQ packages. This SkanIt IQOQ tool is an independent software designed to verify SkanIt Software 7.0 integrity and performance.
- With SkanIt Software 7.0 it is possible to copy/paste protocol steps and protocol step branches. This makes it easy to create multiple steps with identical parameters.
- A new Enzyme Kinetics calculation has been implemented in SkanIt Software 7.0. It calculates enzyme reaction parameters  $V_{\max}$  (the maximum rate of an enzyme catalyzed reaction) and  $K_m$  (the concentration of substrate which permits the enzyme to achieve 50% of  $V_{\max}$ ) using Lineweaver-Burk equation.
- A new statistical calculation, Parallel Line Analysis, has been implemented. PLA A is a statistical method to determine the parallelism of two standard curves calculated using standard series of two chemical compounds and to calculate the relative potency of those two substances (according to Ph. Eur, section 5.3.).
- A new Z-factor calculation calculates the single statistical parameter that reflects to the effect size in an assay and reveals how efficiently positive and negative samples are separated from each other in the present data set.

- Standard curve extrapolation has been extended to cover also all logistic fit types besides linear regression. Extrapolation of logistic fits is allowed only within a defined concentration range where the extrapolation result can be calculated with high reliability.
- A new Summary step has been implemented to create a user-definable combined table of the measurement and calculated data.
- The digital signature of the session can be removed. This gives possibility to correct possible calculation errors noticed after signing. Removal of signing and possible re-signing are tracked in the audit trail.
- A new Backup/Restore feature has been added to SkanIt settings. This function will create a special “.skab” file that contains all SkanIt Software settings, including all customization information. In the DDE edition, the backup will also contain all SkanIt sessions with history data and all DDE specific settings like User groups, User lists etc.
- SkanIt Software 7.0 DDE has an additional feature to create a pdf file with full user information. This covers user groups, their members (users in each group), all privileges of each group etc.
- A new search tool has been added to SkanIt Software 7.0 DDE session audit trail. This makes finding specific changes remarkably easier.
- SkanIt Software 7.0 DDE session audit trail visibility has been improved by adding different colors to highlight changes in the session.
- SkanIt Software 7.0 DDE session audit trails can be exported as .pdf or .xml files (only .xml export in previous versions).
- The option to inactivate the Cloud Library connection has been added to SkanIt Software settings in case the user’s company policy prevents such a connection to external cloud services.
- The possibility to activate user accounts in the Research Edition has been removed. RE operates always without user accounts.

## **SkanIt Software 7.0 Anomalies Fixed**

- An integrated third-party software component used in SkanIt Software, Log4Net, has been updated to the latest version to prevent possible vulnerability of the Log4 system.
- With previous SkanIt Software versions it was not possible to rename a measurement step in a session where multiple measurement steps were present in such a situation when there were more than one session open simultaneously. This bug has been fixed in SkanIt Software 7.0.
- SkanIt Software 6.1 and earlier versions did not properly differentiate the Multiskan FC models with and without an incubator. This caused temperature error messages reported at the end of the run when the Multiskan FC without an incubator was used. SkanIt Software 7.0 manages these two models properly and no incorrect error messages are reported.
- It was possible to perform pathlength correction with  $\mu$ Drop and  $\mu$ Drop Duo plates without blank subtraction, leading to incorrect results. SkanIt Software 7.0 performs blank subtraction automatically also with these plates.

- It is possible to use the calibrator sample back calculated concentration as a threshold value in the Classification step. Note that it cannot be used after curve fit in Classification. Previously concentrations of calibrators could not be used in classification at all.
- When certain pre-calculation steps are added into kinetic data, the result data is not recognized as kinetic data even if kinetic nature is restored over the calculation (e.g. basic calculation performing A450nm – A620nm for kinetic assay). SkanIt Software 7.0 calculates these kinetic data sets correctly so that the kinetic nature is restored.
- When SkanIt Software renames the automatic result report files, it has been possible that the folder path / file name became so long that Windows could not manage the folder path. This led to a failure in the report generation. In SkanIt Software 7.0, the report file renaming principle has been modified so that too long folder paths are not possible.
- When SkanIt Software 6 or older version is used, in certain calculation steps (e.g. dose response or classification) the sample group selection was not saved correctly to the session, causing the selection to be reset to "All" when the session is saved and re-opened. SkanIt Software 7.0 stores group selections correctly in the session.
- When a SkanIt session was stored into a network folder it was possible that two people could access the file simultaneously from two different PCs, even running the same session file with two different instruments. This caused partial loss of the result data, and a totally confusing session reporting after the run. SkanIt Software 7.0 controls the session ownership more strictly and such situations are prevented.
- Older SkanIt Software versions sometimes added unnecessary PLC 975/900 nm measurement steps into the session protocol. This PLC step addition algorithm has been optimized in SkanIt Software 7.0 to prevent unnecessary steps.
- CV% calculation algorithm of SkanIt Software 7.0 has been updated to prevent cases where CV% could be negative.
- In certain cases where multiple calibrators are giving just a baseline result value, SkanIt Software 4, 5 and 6 versions calculated the standard curve R2 incorrectly for logistic fittings. This has been fixed in SkanIt Software 7.0.
- The SkanIt Software 7.0 DDE session audit trail records possible renaming of the session file. Previously renaming was not listed in the session audit trail.
- In certain rare cases it was possible that the user reported in the session information was not the correct person who created the existing result data. In SkanIt Software 7.0, the term "user" has been clarified to ensure that user information always contains the name of the person who is responsible for generating the existing result data.
- When SkanIt Automation Interface server is running on the PC memory, SkanIt Software cannot be started. With older versions, there was no message indicating the reason why SkanIt Software was not able to start. With SkanIt Software 7.0, a clear informative message is given to instruct to shut down the automation server.

## SkanIt Software 7.0 Residual Anomalies

The following known anomalies have not been fixed:

- When a turbidimetric measurement step is executed with SkanIt Software using a cuvette, there is an issue in the blanking process of the measurement. Therefore, the turbidimetric measurement step should not be used with cuvette. Instead all the same measurements can be performed using the photometric measurement step.
- AVG, SD, CV% step calculates results incorrectly after curve fit when multiple sample groups are in use. The step calculates the results over all groups instead of “per group” as the calculation should be performed.
- When the user copies and pastes a protocol branch, only the first step (parental step for the branch) is renamed with a unique step name. Steps inside the branch will be copies so that duplicate step names are created. Rename the steps manually to avoid confusion.
- In a case where the user has defined in the layout two or more calibrators with the same concentration but not defined them as replicates, this calibrator curve cannot be used using the saved curve option. When such a saved curve is used in another session, no standard curve is drawn or calculated without an error message.
- When a user opens an .ska file with SkanIt Software 7.0, it is possible to select multiple .ska files simultaneously but only the first one will be really opened.
- When a new filter is defined in Multiskan FC filter list, that filter is not possible to be selected or used in sessions that are currently open. The new filter is available for use only in session files that have been created after the filter addition.
- It is possible to set dispenser step parameters inside a kinetic loop so that dispensing is not performed at all. For example, if you set up the kinetic loop with 50 readings, it is still possible to set the “Dispense at reading” parameter to any number over 50. When a reading defined in the step is not present, the dispensing action will be skipped totally.
- It is possible to set kinetic calculation parameters so that the calculation cannot calculate any results. The step is marked to be in error state but if these parameters are under the “Advanced” section, the error state is not clear when the session is opened.
- It is mandatory to have Excel software installed to be able to generate .txt report files. A non-informative error message "Error when exporting results." is given instead of an explanation of the reason.
- SkanIt Software does not prevent Multiskan Sky or Multiskan SkyHigh instruments from activating the power save mode during long pause steps. This will lead to the interruption of the protocol execution.
- When a custom formula step is added, only those result and calculation steps that have been created before adding the customer formula step are possible to be chosen as variable source. Steps added after the custom formula step are not shown in variable definition window.
- When a kinetic data set has disabled/saturated replicates, the average measurement times are sometimes calculated incorrectly.
- When Audit trails are exported to .pdf or .xml files, it is not possible to define the folder where the reports are stored. Saving happens always to the folder that is the Windows default folder at that moment.

- When a standard curve is generated using a certain type of calculated results (such as kinetic integral or average), the saved curve does not store the correct detection technology. Instead, the detection technology is reset to “None” which can cause confusion when the saved curve is used.
- In the Quality Control step, it is possible to create a rule that is so long that a part of the rule is not visible on the screen.
- When Fluoroskan or Fluoroskan FL filter pair is re-validated this will also change the "installation date" in the instrument report and the instrument filter settings window.
- When kinetic data is modified using a custom formula that will retain the kinetic nature of the data, this calculation will eliminate reading times from the results. Therefore kinetic displays such as “Show Graph” will give senseless graphs.
- When a backup package is created with the SkanIt Software 7.0 backup feature, there is nowhere an indication of the SkanIt Software edition. Therefore, it is recommended to manually add edition information in the backup file name.

## **4 SkanIt Software 7.0 Release Notes**

SkanIt Software 7.0 Residual Anomalies



## SkanIt Software 6.1.1 Release Notes

### SkanIt Software 6.1.1 New Features

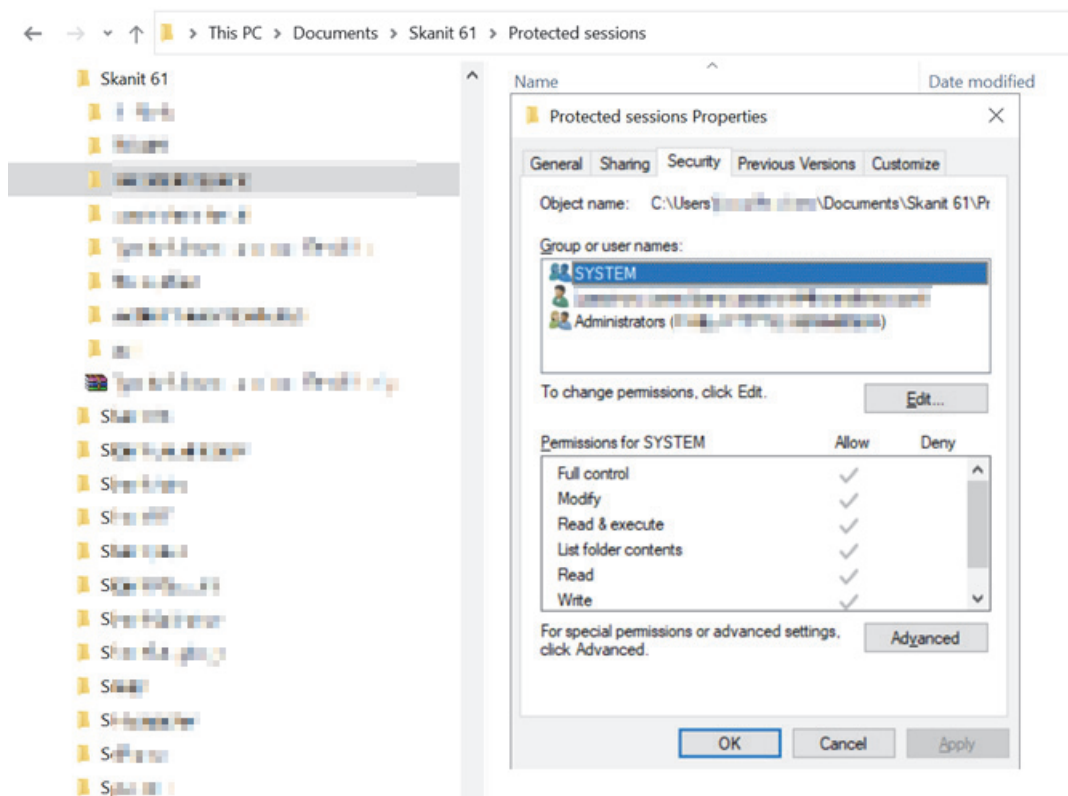
SkanIt Software 6.1.1 does not have any new features compared to SkanIt Software 6.1.

### SkanIt Software 6.1.1 Anomalies Fixed

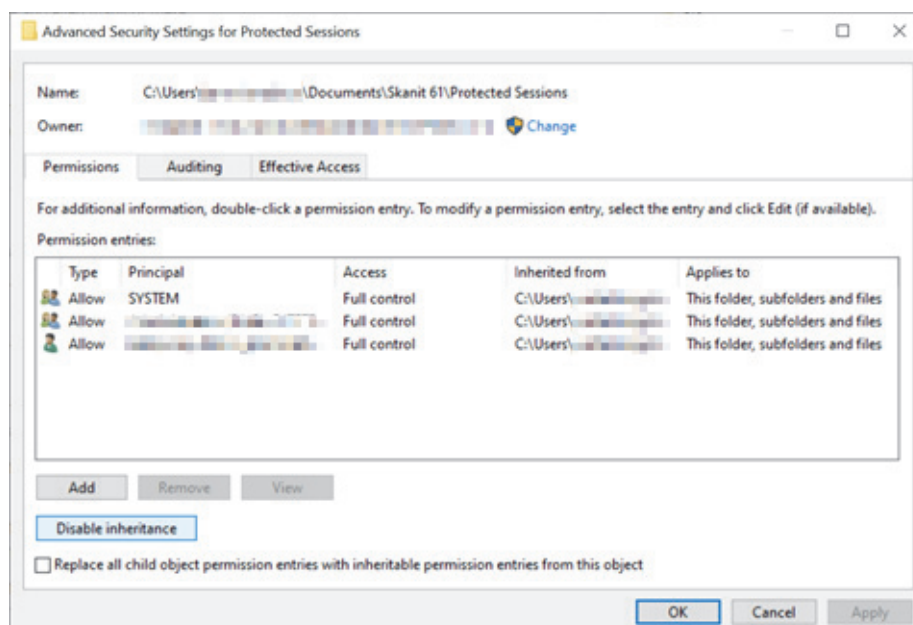
One critical SkanIt Software version 6.1 bug has been fixed in SkanIt Software 6.1.1.

- With SkanIt Software 6.1 it is not possible to modify folder permissions so that accidental deletion of the SkanIt session files could be prevented. If the rights to delete the files from a folder are blocked in Windows settings, that will also prevent using that folder to store SkanIt Software 6.1 session files.
- The root cause for the problem was caused by the Windows operating system independently from the SkanIt Software. This is seen so that such folder permission modifications will prevent using the folder to save files from any other software including Microsoft Word or Excel. The root cause was the Windows file saving process that includes a certain test phase where an empty file is written and immediately deleted from the target folder. Without deleting rights, this process was interrupted and the file saving failed.
- In SkanIt Software 6.1.1 this file saving process has been modified so that the default Windows process is not used to save the files. The new file saving process SkanIt Software 6.1.1 uses does not have any file deletion actions anywhere so blocking deleting rights in Windows does not cause any issues.
- With SkanIt Software 6.1.1, you can protect the sessions from deletion as follows (Note: you need to be Windows administrator to do this):
  - Create a folder for the protected sessions.

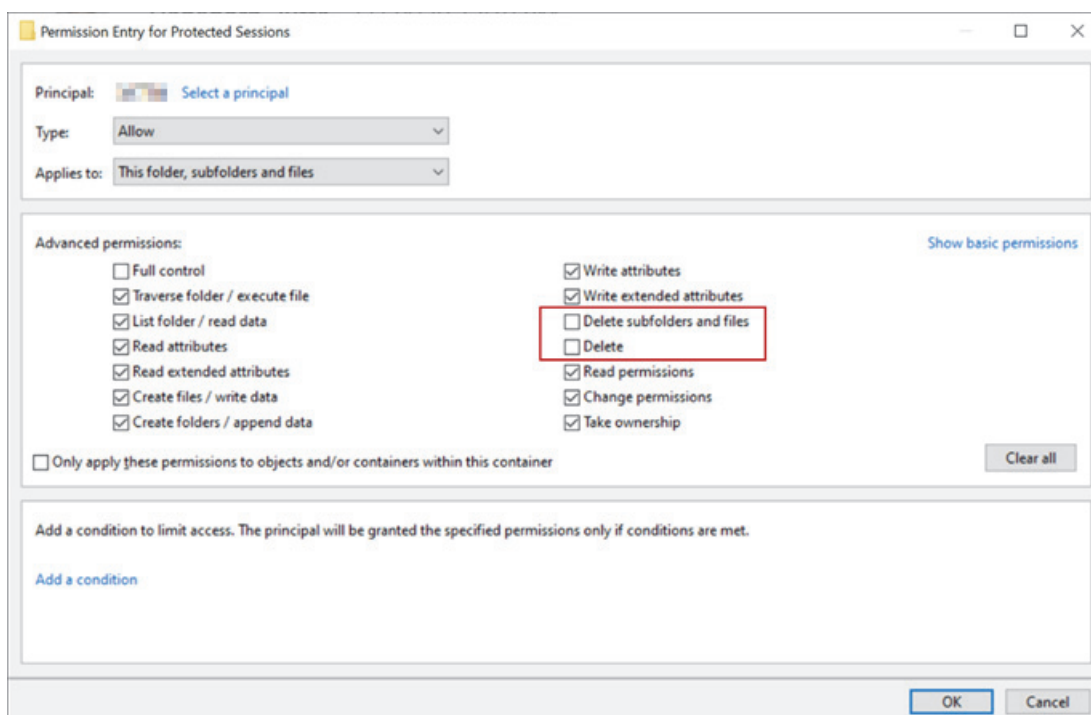
- With Windows Explorer, select the folder and click the mouse right button. Select “Properties”. Then go to the “Security” sheet:



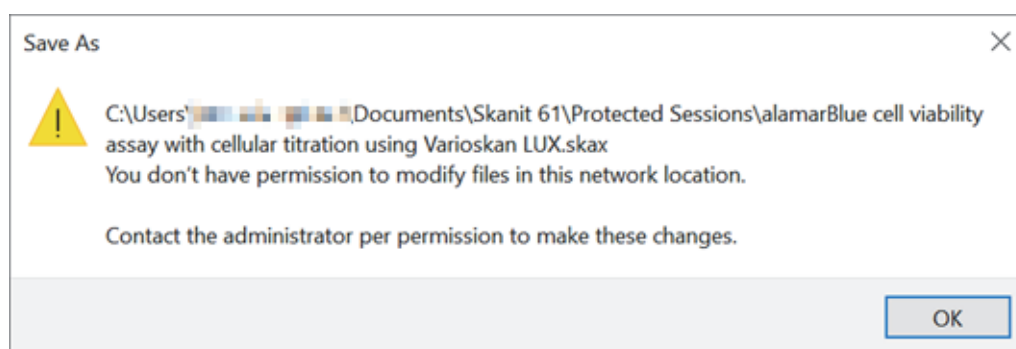
- Select “Advanced” and there click “Disable inheritance” to remove the permissions of this folder from the parental folders. This gives possibility to modify the permissions.



- Select the principal and then double-click the principal to open the permission settings and there go to “Advanced permissions”.
- Unselect “Delete subfolders and files” and “Delete”.



- Repeat this to all principals in the list and click OK to close all windows.
- This folder is now protected from all deletions but can be used to save files using SkanIt Software 6.1.1.
- If you try to save a session into this folder with SkanIt Software 6.1, an error message is given and a sessions file with zero-byte size is created:



## **SkanIt Software 6.1.1 Residual Anomalies**

SkanIt Software 6.1.1 does not have any other bug fixes than the one described in [SkanIt Software 6.1.1 Anomalies Fixed](#), so all residual anomalies listed in “[SkanIt Software 6.1 Residual Anomalies](#)” on [page 21](#) are still valid for SkanIt Software 6.1.1.

# SkanIt Software 6.1 Release Notes

## SkanIt Software 6.1 New Features

Based on SkanIt Software version 6.0.2, the following new features have been implemented:

- SkanIt Software 6.1 can control the Multiskan SkyHigh instrument
- SkanIt Software 6.1 can handle  $\mu$ Drop Duo Plates
- The SkanIt Software 6.1 Cloud Library has a new feature of allowing SkanIt Software session linked Excel Autoloading template files. Some measurement sessions + compatible Excel autoloading target files have been added into the Cloud Library.
- With SkanIt Software 6.1 it is also possible to completely inactivate the connection to the SkanIt Cloud Library if the customer's IT security process does not accept external Internet communications. This option has been added to "Settings/Security".
- SkanIt Software 6.1 has been tested to be compatible only with the 64-bit Windows 10 operation system. Other operation systems are not supported.
- SkanIt Software 6.1 has an improved display for the connected instruments. When the instrument is selected in the SkanIt Software main screen, the connected instruments are clearly shown with a green indicator color.
- SkanIt Software 6.1 has an improved automation for Varioskan LUX plate adapter and dispenser control. In previous versions, when creating a new plate template, the user had to manually define plate adapter associations and dispensing compatibility. In SkanIt Software 6.1, this process is fully automatic based on the information given in the plate template.
- The plate template list has also a new feature that allows the user to select which plate templates are visible and which are hidden. This makes it possible for the user to see only a short list of plates that really are in use.
- SkanIt Software 6.1 has a new feature that allows sample names to be loaded into the plate layout directly from a TXT file. When selecting sample names from a list, the user can choose the text file from which the sample names are loaded.
- The "Show transmittance" feature that was present in older SkanIt Software versions has been removed from SkanIt Software 6.1. The feature turned out to be more confusing than useful because the transmission values could not be used in any further calculations.
- Photometric measurement has been divided into two separate measurement steps in SkanIt Software 6.1. Photometric measurement can be either absorbance or turbidity measurement, and those two are now separated. This allows restrictions in turbidimetric measurements to be implemented in SkanIt Software.

- Optical pathlength correction is not allowed in turbidimetric measurement.
- IUPAC (Association of Pure and applied Chemistry) recommendations for the measurement units can be followed: the unit for absorbance measurement is “Abs”, and for turbidimetric measurement “OD”.
- This change also clarifies the differences between these two measurements. The user will see which assay type is in question.
- The SkanIt Software 6.1 fluorometric measurement step has an additional help tool available. When a fluorometric measurement step is added, a Fluorescence SpectraViewer window will open. This Fluorescence SpectraViewer has a large fluorescence spectra database with over 500 fluorometric dyes. The user can search for the dye, and the typical fluorescence spectra with collected peak values is displayed. This will make selecting the wavelengths remarkably easier than before.
- Formatting possibilities of SkanIt Software 6.1 graphs (Standard curve, Effective dose, and Graph steps) have been remarkably expanded:
  - It is possible to define graph and axis titles and their colors.
  - It is possible to define curve, standard sample point, unknown sample point, and ED point colors freely.
  - With the Graph step, all colors of the curves, bars etc. can be defined freely.

## SkanIt Software 6.1 Anomalies Fixed

Based on SkanIt Software version 6.0.2, the following anomalies have been fixed:

- In some cases, SkanIt Software 6.0 series lost the system settings and this prevented SkanIt Software from running. In SkanIt Software 6.1, this problem has been solved. If such issue happens with the 6.1 version, it will automatically regenerate the settings. The user is notified that the system settings were lost and had to be regenerated. (Note: this notification is given always in English, not translated into other languages.)

If the system regenerates the settings, it will have the following effects to the user:

- The recent files list is cleared
- If the user has saved any standard curves to be used in other sessions, those saved curves are lost
- If the user has created any own plate templates, those need to be regenerated
- If the user has determined any own pathlength correction K-factors, those need to be re-specified
- In SkanIt Software 6.1, blank subtraction is now preceding all pathlength correction calculations automatically, with all plate types and formats. The user does not need to perform blank subtraction manually before pathlength correction.
- In SkanIt Software 6.1, the default optical pathlength of the  $\mu$ Drop and  $\mu$ Drop Duo Plates has been set to 0.5 mm.

- Certain result column titles have been corrected in SkanIt Software 6.1. Raw data columns are named based on the detection technology: Abs, RFU, RLU etc. instead of only “Result” or “Value”. Similarly, several column titles of the calculation steps have been updated to be more informative.
- SkanIt Software 6.1 result reporting has been improved from SkanIt Software 6.0 series:
  - In certain cases, SkanIt Software 6.0 series did not report all the data. Several of such bugs have been corrected.
  - The ED50 result value display in reporting in such cases where multiple assay groups are in use has been clarified.
  - If automatic result reporting has a non-existing reporting path, this will be recognized, and a clear error message is given in SkanIt Software 6.1.
  - SkanIt Software 6.0 series did not always follow result number format settings set by the user. Several of these bugs have been fixed in SkanIt Software 6.1.
  - When SkanIt Software 6.1 generates Excel report files, it will automatically eliminate empty columns that have no data.
  - The bug related to summary sheet sorting that prevented reporting in certain cases with SkanIt Software 6.0 series has been fixed.
  - When automatic reporting is in use and the maximum allowed folder path length is exceeded, the previous SkanIt Software versions stopped working. SkanIt Software 6.1 handles the situation with an informative message about a too long folder path.
- The SkanIt Software 6.1 robotic Automation Interface (AI) has several bug fixes:
  - Temperature setting via AI in SkanIt Software 6.0 series caused sometimes the device connection to be lost.
  - In certain cases, the “GetReport” command caused an AI error in SkanIt Software 6.0 series. SkanIt Software 6.1 generates reports reliably.
  - In SkanIt Software 6.0 series, incorrect temperature information was shown after a session pre-check failure. SkanIt Software 6.1 reports correct temperature information also in such a situation.
  - Certain problems in executing sessions with pathlength correction using AI have been fixed in SkanIt Software 6.1.
  - The SkanIt Software Autoloading feature was not supported by AI in SkanIt Software 6.0 series. The SkanIt Software 6.1 AI supports autoloading to ready-made Excel templates.
  - Using the SkanIt Software “Automatic export after execution” feature with AI has been improved.
  - If Varioskan LUX has an integrated gas module, CO<sub>2</sub> and O<sub>2</sub> levels are reported via AI.
  - If the user by accident tries to export an empty report using AI, that caused SkanIt Software 6.0 series AI to crash. SkanIt Software 6.1 AI returns in this case an informative error message.
  - In SkanIt Software 6.0 series AI, it was possible to try to run a session designed for an incorrect instrument model (e.g. a Multiskan Sky session when Varioskan LUX is connected) and this lead AI to become frozen. SkanIt Software 6.1 AI does not allow running such sessions.

- SkanIt Software 6.1 instrument connections and control have been improved by the following bug fixes:
  - CO<sub>2</sub> and N<sub>2</sub> control settings for the Varioskan LUX gas module are active only when the instrument has an integrated gas module. Previously, these settings could be accessed even without a gas module and that led to an inevitable and unnecessary instrument error state.
  - SkanIt Software 6.0 series had some inconsistencies between the stand-alone user interface and PC control. It was possible to interrupt the measurement execution from another user interface while another one was executing the protocol. SkanIt Software 6.1 has improved control for such situations protecting ongoing measurements.
- The following DDE-related bugs have been corrected in SkanIt Software 6.1:
  - Error messages related to invalid/illegal login trials have been changed to be more informative. Instead of a simple “Login failed” message, there are several new “Login failed because...” error messages, for example, “Login failed because the user has not been defined in any SkanIt Software user group”.
  - When a session is transferred between the DDE and RE versions, there has been some inconsistency in the behavior related to digital signatures and audit trails in SkanIt Software 6.0 versions. This behavior has been clarified in SkanIt Software 6.1.
- SkanIt Software 6.1 session management has the following improvements:
  - Previous SkanIt Software versions showed inconsistent behavior when opening session files that had been renamed outside SkanIt Software. SkanIt Software 6.1 uses session names properly even if they have been modified externally.
  - SkanIt Software 6.0 versions could handle only files with the file extension “.skax”. In certain cases, the operation system changed the extension to “.SKAX” and this caused a problem. SkanIt Software 6.1 can handle both .skax and .SKAX files.
- The following data display bugs have been fixed in SkanIt Software 6.1:
  - The kinetic curve display in the on-line follow-up window is always scaled based on only those wells that are selected to be shown. In previous versions, this scaling was done always based on all wells.
  - Display settings that have been chosen by the user are stored together with the session. When the session is re-opened, the same settings are valid when the session opens.
- Generation of the calibration curve using the standard curve step has been improved in SkanIt Software 6.1:
  - If the plate layout is changed after the standard curve step has been added, the standard curve display is updated accordingly in all cases.
  - If the source data contains invalid data for the curve fit (for example zero values with logarithmic transformation), the user will get an error message about invalid data. In SkanIt Software 6.0 series, it was not possible to overcome this error by disabling those values. In SkanIt Software 6.1, disabling the data will eliminate errors.
- SkanIt Software 6.0 series did not allow the dilution factor step to be added after the curve fit. This very common calculation path is allowed in SkanIt Software 6.1.



- SkanIt Software 6.1 is capable of reporting kinetic spectra data as Excel .xlsx files. That was not possible with the previous versions.

## **SkanIt Software 6.1 Residual Anomalies**

The following known anomalies have not been fixed:

- If the graph in the SkanIt Software 6.1 Effective Dose calculation step has data from multiple assay groups and user-modified texts or colors, those modifications will be reset to defaults when the session is re-saved with the “Save as” or “Save as new” command.
- If the assay group definition in the normalization step and in the following effective dose step are different, then the “Show logarithmic x- and y-axis” and “Show replicates selections” are inactive.
- The SkanIt Software 6.1 Autoloading feature has a limitation of the pathlength of the Autoloading target file. The full path for the Autoloading target file must be less than 218 characters, including the date and time stamp that is added at the end of the file name.
- If the graph in the SkanIt Software 6.1 Effective Dose calculation step has data from multiple assay groups and user modified texts or colors, those modifications might be reset to defaults when the assay group selection is changed.
- If the graph in the SkanIt Software 6.1 Effective Dose calculation step has data from multiple assay groups, the option to define replicate point colors does not work always for all groups.
- The SkanIt Software 6.1 sessions are linked to a certain instrument. If the instrument name is changed from the settings while the session linked to that instrument is open, that will cause SkanIt Software 6.1 to crash. Change instrument names only when there are no sessions open.
- The Varioskan LUX robotic tray has two temperature sensors, while the Varioskan LUX universal tray has three sensors. Therefore, when the robotic tray is used, one of the temperature sensors is always reported to be in error state in SkanIt Software run logs.
- When filters are defined in the SkanIt Software instrument settings, it is always mandatory to add the filter bandwidth, also in such cases where the filter does not have any bandwidth. In such case, use any relevant value. For example, the Varioskan LUX LAT module filter with product number F640LP is a long pass filter that passes all wavelengths from 640 nm upwards. For that, 30 nm is a relevant “Bandwidth” because the LAT module detection range ends at 670 nm.
- If measurement is done with multiple wavelengths, SkanIt Software 6.1 calculation steps have a selection window where the source data wavelength is selected. If multiple calculation steps are chained, every step has this same wavelength selection, and this might cause confusion and empty calculation sheets. For example, in a case where a user does an absorbance measurement with 260 nm and 280 nm, then adds a basic calculation step and selects 280 nm data as source (the lowest 260 is the default selection), then adds a second basic calculation step and uses the first one as the data source, even now, when source data exists only with 280 nm, the same 260 nm is still the default selection and therefore there are no results. This wavelength must be selected in every step, even if source data is available only with one wavelength.
- It is possible to calculate concentrations directly in the pathlength correction calculation step. Even if this calculation is not activated, the concentration result column is always shown in the result list view.

- Even if RAM memory usage of SkanIt Software 6.1 has been improved from earlier versions, it still can cause some RAM memory leakage. When multiple sessions are opened and closed, some traces of the sessions will remain in the PC's RAM memory. As a result, RAM memory usage of SkanIt Software increases all the time when the software is used, and this can lead to the software going to unresponsive state. Therefore, it is recommended to restart SkanIt Software once in a while to release the RAM memory.
- SkanIt Software 6.1 allows kinetic measurement to be defined using total time and interval parameters. When this way of defining kinetic measurement is used, it is possible to add a dispensing step inside the kinetic measurement with a "Dispense at reading" value for which a reading does not exist. For example, the whole kinetic assay can be 40 readings and dispensing can be set at reading number 55. When this happens, the kinetic assay is executed normally, but the dispensing action is totally left undone. There is no warning or any notes about this happening.
- When Varioskan LUX is used with SkanIt Software 6.1, there is a plate check functionality that verifies that there is a plate in the tray before the measurement starts. In SkanIt Software, it is possible to create plate layouts that cover multiple plates. SkanIt Software 6.1 will only verify the presence of the first plate when the session is executed. Other plates are not checked.
- When the Standard curve is saved using the "Saved Curve" feature, it is sometimes classified illogically in SkanIt Software 6.1. Saved curves are classified based on detection technology. If the Standard curve step is preceded with some pre-calculation step other than blank subtraction, then this detection technology information is lost and that can lead to some difficulties in using the curve.
- When some calculations, for example, custom formula, are done, the result cannot always be linked to any well or sample anymore. When the user exports the report from such a step, the default report format is still "Plate". This results in an empty report sheet without any data. Select the "List" format in the report settings, then the results are reported correctly.
- SkanIt Software 6.1 performs blank subtraction incorrectly when multiple assay groups are in use and other samples belong to multiple groups simultaneously. In such a case, the average of all blanks, independent on which assay group those blanks belong to, is subtracted from the other samples.
- SkanIt Software 6.1 will become unresponsive if the user tries to execute a session file that has been defined to be read-only on the Windows operation system level.
- If the dose response step has multiple active assay groups, the graph formatting that has been done (colors, texts etc.) is reset when the session is executed.
- SkanIt Software 6.1 AI may crash when two session files are executed one after the other. The crash happens if these two sessions are related so that the second session has been produced by saving the first session with the "Save as" command. This can be prevented by using the "Save as new" command instead.
- The SkanIt Software 6.1 Merge step allows an invalid data set to be merged. When SkanIt Software 6.1 verifies source data steps to be combined in the Merge step, only the detection technology and used wavelengths are checked. Therefore, the Merge step allows merging fluorometric data that has been measured using different excitation bandwidths and optics. For example, fluorometric top and bottom reading data sets can be merged.

## Deliverables

SkanIt Software can be obtained in the following ways:

- The latest SkanIt Software Research Edition package is delivered with all microplate reader instruments as a part of the instrument shipment.
- The latest SkanIt Software Research Edition and Drug Discovery Edition packages can be purchased from Thermo Fisher Scientific or its distributors.
- A special upgrade package is required for old Fluoroskan Ascent, Fluoroskan Ascent FL and Luminoskan Ascent readers that have not been run with SkanIt Software before. These packages are also available from Thermo Fisher Scientific or its distributors.
- A free upgrade for the latest SkanIt Software Research Edition is available for all users of previous SkanIt Software versions at the Thermo Fisher Scientific Website.
- If the latest SkanIt Software Drug Discovery Edition upgrade package is required, contact the local Thermo Fisher Scientific technical support.

The SkanIt Software package is delivered on two USB flash drives that contain the following materials:

- SkanIt Software installation media
- SkanIt Software Technical Manual
- SkanIt Software User Manual in the following nine language versions: English, Chinese, French, German, Italian, Japanese, Portuguese, Russian and Spanish
- SkanIt Software Automation Interface User Manual (Note! Research Edition only, not included with the Drug Discovery Edition)
- Microplate reader manuals:
  - Varioskan LUX Technical Manual
  - Varioskan LUX User Manual (in 9 languages)
  - Fluoroskan, Fluoroskan FL and Luminoskan Technical Manual
  - Fluoroskan, Fluoroskan FL and Luminoskan User Manual (in 9 languages)
  - Multiskan Sky Technical Manual
  - Multiskan Sky User Manual (in 9 languages)
  - Multiskan SkyHigh Technical Manual
  - Multiskan SkyHigh User Manual (in 9 languages)

- Multiskan FC User Manual (in 9 languages)
- Multiskan FC Quick Reference Guide (in 9 languages)
- $\mu$ Drop Plate and  $\mu$ Drop Duo Plate User Manual
- EU Declaration of Conformity documents of all microplate readers