

Spectral Products

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SM32ProForUSB and SPdbUSBm.dll Release Note

1. Introduction

SM32ProForUSB is software that includes various functions related to driving the spectrometer, and SPdbUSBm.dll is a library that contains API functions for application development. SP is distributing it as a reference for driving and application development of its spectrometer products. For more information, you can download it together with the User Manual from the homepage.

1-1. Contact us

For technical inquiries related to the spectrometer and S/W, please contact the e-mail address below or call us.

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1-2. Homepage

Website: www.spectralproducts.com

Download: <https://www.spectralproducts.com/Downloads>

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2. Revision History

2-1. SM32ProForUSB

Date	Revision	Description
4/9/2015	v2.34.10	USB trans packet Size error fixed memory leak error fixed shutter malfunction fixed
12/10/2015	v2.34.11	Added delay during the shutter operation
2/15/2017	v2.34.12	Error solving when applying FFT
8/1//2018	v2.34.13	Some phenomena when using the TimeLine function New Language SDK added
2/1//2019	v2.34.14	Add 64Bit DLL Add API function and fix error
3/19/2019	v2.34.15	New SM Model added Color Graph UI bug fix Modify export storage form
6/7/2019	v2.34.16	New Language SDK added
9/17/2019	v2.34.17	SM304 detector inversion code related fixes C # SDK bug fix Add New Language Trigger Option Manual added
2/18/2020	v2.34.18	New SM Model added SM304 Base Line Correction function added Fixed some UI bugs Resolve errors when operating multichannel Visual Studio update
3/18/2020	v2.34.19	Bug fix related to Record
4/1/2020	v2.34.20	Add NLC API Function Manual and SDK
4/13/2020	v2.34.21	Fixed some UI bugs Fix Dark Correction function using Optical Black Pixel
5/7/2020	v2.34.22	NLC SDK fix Technical Note added and modified
6/29/2020	v2.34.23	EEPROM default ini file application method added Add missing Hg-Ar Line information
7/10/2020	v2.34.24	SM304 driver recognition issue fix Spectral graph display error fix in Color Scope mode
10/08/2020	v2.34.25	Error fix on operating SM304 & SM445 in multichannel mode C# SDK update LabView SDK update Memory error fix on using Channel ID SM303-1007S driver update Minor issue fix on T/R % mode
11/19/2020	v2.34.26	Some UI display bug fix

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12/7/2020	v2.34.27	Driver for SM245-EXT added Adding WHQL certificate for SM series driver files
03/31/2021	v2.34.28	Error fixed on Time Line dialog Add a section for some extra description in the print
07/07/2021	v2.34.29	Add upgraded SM445 drivers Add SDK codes for the upgraded SM445
07/30/2021	v2.34.30	Error fixed in the Peak Find algorithm Bug fixed on the custom calibration save
08/06/2021	v2.34.31	Error fixed on the old SM440/SM442 model recognition
08/10/2021	v2.34.32	Add SM304-512-EXTm drivers Error fixed on the SM303 model trigger mode display
09/10/2021	v2.34.33	Add SM304-256-EXTm drivers
09/13/2021	v2.34.34	Add the baseline correction function for the SM304- 256-EXTm series Error fixed on the wavelength calibration window
07/21/2022	v2.34.35	Add the SM642-EXTm model Error fixed on the SM245 external trigger mode
07/22/2022	v2.34.36	Bug fixed at the version update mode in x64 OS
08/30/2022	v2.34.37	Bug fixed at the EEPROM Bug fixed at the Calibration Window
01/27/2023	v2.34.38	SM642-EXTm v41 driver file added
02/22/2023	v2.34.39	SM245-2MHz model support added
04/24/2023	v2.34.40	Serial number display issue fixed USB interface packet size setting issue fixed
08/04/2023	v2.34.41	Reconnection function added
12/01/2023	v2.34.42	External trigger function error fixed

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2-1-1. v2.34.10

DATE: 4/9/2015

Issue:

- Malfunction when operating the spectrometer on 64Bit operating system
- Error occurred when accessing EEPROM
- Shutter malfunction

Fixed:

- In case of 64Bit operating system, fix USB trans packet size (SPdbUSBm.dll)
- In memory of string split in spReadEEPROM function, a memory leak is found and fixed
- Fix shutter malfunction error in firmware

Comment :

- The USB trans packet size has been modified in DLL and firmware (system file) and cannot be used in combination with previous versions of dll and system file.
- If the previous version of the software is installed on the PC, it is recommended to install the new version after confirming that the installation folder and the existing spectrometer driver are completely removed.

2-1-2. v2.34.11

DATE: 12/10/2015

Issue:

- Malfunction when the shutter is operated for a long time

Fixed:

- Delay added when operating the shutter\
- Delay added for the dark measurement

Comment :

- Operates stably for a long time by operating the shutter for a long time or by continuously adding a delay when changing the position due to a malfunction.
- Prolonged driving test

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2-1-3. v2.34.12

DATE: 2/15/2017

Issue:

- Error in FFT calculation of SM440

Fixed:

- Check and fix the memory leak due to the pixel count error of SM440 when calculating FFT

2-1-4. v2.34.13

DATE: 8/1/2018

Issue:

- When using the Timeline function, if the Integration Time and Interval are set similarly, the program crashes.
- Add C # SDK

Fixed:

- Fixed by fixing code related to thread synchronization.
- Added SDK code for C # developers. A simple driving code of the spectrometer using SPdbUSBm.dll and the ability to output measurement data graphs.

2-1-5. v2.34.14

DATE: 2/1/2019

Issue:

- Add DLL for 64Bit Application
- Added DLL API Function Manual update
- Separate installation version for English

Fixed:

- DLL development environment update.

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- Visual Studio 6.0-> Visual Studio2012
- Added DLL API Function Manual update
- For the English version, delete the Manual folder in the installation folder

Comment :

- Fixed polynomial calculation error in spGetWLTable function in SPdbUSBm.dll.

2-1-6. v2.34.15

DATE: 3/19/2019

Issue:

- SM445, SM303-2048 models added
- UI resizing error when changing window size in Color mode graph
- Modify the separator when saving the export data file
- Some vaccine programs (pills) detected SPdbUSBm.dll as malicious code.

Fixed:

- Add SM445, SM303-2048 to apply the driver file and dll to the installation file
- Calculate the graph area ratio of color mode when the window is resized to automatically adjust the size
- When saving the export data file, it is corrected by tapping the separator.
- As the DLL development environment was updated to Visual Stdio2012, it was confirmed that it is detected as a malicious code in the vaccine due to some environmental settings.

2-1-7. v2.34.16

DATE: 6/7/2019

Issue:

- Add Matlab SDK

Fixed:

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- Added SDK for Matlab developers. Spectrometer basic driving code and measurement data graph output function using SPdbUSBm.dll.

2-1-8. v2.34.17

DATE: 9/17/2019

Issue:

- SM304 detector data upside down code inserted into DLL
- C # SDK error fix
- Add Excel VBA SDK
- Add Trigger Option Manual

Fixed:

- SM304 detector data Upside-down code is inserted into DLL to correct related code
- Fixed graph UI component related error in C # SDK
- The internal driving timings of the internal and external triggers of SM Series models are summarized and produced manually.

2-1-9. v2.34.18

DATE: 2/18/2020

Issue:

- SM303-1007S model added
- Add SM304 Base Line Correction function
- Dark Scan Dlg's subtraction UI bug
- When SM304 and SM642 are driven by Multichannel, a pause occurs
- Development environment update

Fixed:

- Add SM303-1007S and apply the driver file and dll to the installation file
- In the case of SM304, the Base Line Correction option can be set when measuring Dark.

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- Fixed the problem that the subtraction option button of the Dark ScanDlg disappears when the Integration Time setting value is changed.
- Fixed a memory error that occurred when driving SM304 and SM642 Multichannel
- Development environment update.
- Visual Studio 6.0 > Visual Studio2012

Comment :

- Baseline correction is added to remove the pattern noise caused by the CCD characteristics of SM304 and make it appear flat.
- When the Baseline Correction option is activated, after dark measurement, apply Base Line intensity 7000 and gain 1.5

2-1-10. v2.34.19

DATE: 3/18/2020

Issue:

- When recording the program, a certain unexpected phenomenon occurs

Fixed:

- Infinite wait due to bottleneck related to synchronization of Record Thread
- Fix data pending code and lock function when operating UI during recording

2-1-11. v2.34.20

DATE: 4/1/2020

Issue:

- Nonlinearity Correction function-related content added

Fixed:

- Nonlinearity Correction SDK (VC++) and Function Manual added

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2-1-12. v2.34.21

DATE: 4/13/2020

Issue:

- Program freeze when using File Open Dialog
- Modification of Optical Black Pixel selection method

Fixed:

- Changed File Open Dialog call class
- Changed and added the Optical Black Pixel selection method

Comment :

- For the existing Optical Black Pixel, Dark Correction was performed by selecting several of the Dummy Pixels of the CCD, but only one of the Dummy Pixels was selected after the change.
- When creating a spectrometer, a function that can be used as an optical black pixel by adding light to a few pixels among effective pixels in addition to a dummy pixel has been added.
- The above function can be used as a spAutoDark function. For more information, refer to the Function Manual.

2-1-13. v2.34.22

DATE: 5/7/2020

Issue:

- Nonlinearity Correction SDK code modification
- Technical Note added and modified

Fixed:

- NLC SDK comment and message English work
- Technical Note: TE Cooling added
- Technical Note: Auto Dark Correction

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2-1-14. v2.34.23

DATE: 6/29/2020

Issue:

- EEPROM default ini file application method added
- Hg-Ar Line information added

Fixed:

- If EEPROM is not supported or the model is empty, the confirmation message that occurs and the CCD type selection Dlg are omitted and 'serial.ini' can be applied immediately.
- Add Hg-Ar Line information to 'SM32ProX.ini' file

Comment :

- Added 'EconUnit' keyword to the 'SM32ProX.ini' file. Corrected how to apply the 'serial.ini' file according to the 'EconUnit' setting value.
- If 'EconUnit=1', confirmation message and CCD type selection Dlg are omitted.
- If 'EconUnit=0' or there is no item, apply through confirmation message and CCD Type selection dlg as it is in the existing method

2-1-15. v2.34.24

DATE: 7/10/2020

Issue:

- SM304 driver recognition issue on Windows 10
- Spectral Graph Display error in Color scope mode

Fixed:

- Due to the digital code sign issue on Windows 10, SM304 driver installation sometimes caused some recognition issues and it was solved by applying EV code signing
- The data on the spectral graph in the Color scope mode was displayed wrong and it was solved.

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2-1-16. v2.34.25

DATE: 10/08/2020

Issue:

- Error on operating SM304 and SM445 at the same time in the multi-channel configuration
- C# SDK update
- LabView SDK update
- SM303-1007S driver update
- Minor issue on T/R % mode

Fixed:

- Fixed the multi-channel configuration issue of the SM445 when operating with SM304, by changing the default setup parameters
- Update for the C# SDK functions
- Update for the LabView SDK with adding some more vi files
- Fixed the memory error when using an assigned channel ID that was damaged
- Update the SM303-1007S driver for Windows x86
- Fixed the issue that Ref./Dark scans at the T/R % mode caused the data displayed to disappear

2-1-17. v2.34.26

DATE: 11/19/2020

Issue:

- Graphic Control toolbar button sizes get collapsed/changed when some OS display setting was changed

Fixed:

- Graphic Control toolbar button size is properly adjusted per Windows display layout scale.

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2-1-18. v2.34.27

DATE: 12/7/2020

Issue:

- Driver files for SM245-EXT were not included in
- WHQL certification for SM series drivers was missing

Fixed:

- SDK & system driver files for SM245-EXT were added.
- Applying WHQL digital certificate from Microsoft on all the driver files for SM series

2-1-19. v2.34.28

DATE: 3/31/2021

Issue:

- Error when clicking the browse button on the Time Line dialog
- Need for adding more description in the print

Fixed:

- Fixed the error on the Time Line dialog.
- Adding a new section to put more description in the print.

2-1-20. v2.34.29

DATE: 7/7/2021

Issue:

- The SM445 was upgraded

Fixed:

- Adding new driver files for the upgraded SM445.
- Adding new SDK codes for the upgraded SM445.

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2-1-21. v2.34.30

DATE: 07/21/2021

Issue:

- Error in the Peak Find algorithm
- Error in saving the custom calibration data

Fixed:

- The +/-1 pixel offset in the finding peak was fixed.
- The data overlapping error when saving a new custom calibration data into the ini file.

2-1-22. v2.34.31

DATE: 08/06/2021

Issue:

- Error when running the software with old SM440/SM442 series

Fixed:

- The error in the initial board recognition process for the old SM440/SM442 series was fixed.

2-1-23. v2.34.32

DATE: 08/10/2021

Issue:

- Adding new SM304-512-EXTm drivers
- Error on SM303 trigger mode display

Fixed:

- The driver files and SDK examples for the SM304-512-EXTm model were added.
- The error in the trigger mode display for SM303 was fixed.

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2-1-24. v2.34.33

DATE: 09/10/2021

Issue:

- Adding new SM304-256-EXTm drivers

Fixed:

- The driver files and SDK examples for the SM304-256-EXTm model were added.

2-1-25. v2.34.34

DATE: 09/13/2021

Issue:

- Missing baseline correction function for the new SM304-256-EXTm series
- Some bugs in the wavelength calibration window

Fixed:

- The baseline correction function was added for the new SM304-256-EXTm model.
- The error on the wavelength calibration window was fixed.

2-1-26. v2.34.35

DATE: 07/21/2022

Issue:

- Add SM642-EXTm model
- Fix the error in the SM245 external triggering

Fixed:

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- The new driver file for the SM642-EXTm was included and the related new SDK was added.
- The driver file for the SM245 was fixed.

2-1-27. v2.34.36

DATE: 07/22/2022

Issue:

- The driver files were saved in the wrong system folder when updating the older version in x64 OS.

Fixed:

- Fixed the driver file location issue when updating the older version in x64 OS.

2-1-28. v2.34.37

DATE: 08/30/2022

Issue:

- Error on the EEPROM setting for the SM445
- Error on the factory default setting on the Calibration Window

Fixed:

- Fixed the EEPROM setting value for the SM445
- Fixed the error for the factory default calibration setting

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2-1-29. v2.34.38

DATE: 01/27/2023

Issue:

- SM642-EXTm v41 update

Fixed:

- SM642-EXTm v41 driver files added

2-1-30. v2.34.39

DATE: 02/22/2023

Issue:

- SM245-2MHz model support

Fixed:

- SM245-2MHz model driver files added

2-1-31. v2.34.40

DATE: 04/24/2023

Issue:

- Serial number display error
- USB communication packet size setting error

Fixed:

- Serial number display error on the Main window fixed
- UBS communication packet size setting issue fixed

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2-1-32. v2.34.41

DATE: 08/03/2023

Issue:

- USB reconnection function

Fixed:

- UBS reconnection function added

2-1-33. v2.34.42

DATE: 12/01/2023

Issue:

- External trigger function error

Fixed:

- External trigger function error when time averaging is ≥ 2 fixed

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2-2. SPdbUSBm.dll

Date	Revision	Description
4/9/2015	v2.34.1.0	Fixed Shutter operation error Fixed spReadEEPROM function memory error Visual Studio update New API Function added spGetWLTable function error fix Fixed a phenomenon that some vaccine programs detect as malicious code SM304 data upside down code added
2/18/2020	v2.34.2.1	SM304 Base Line Correction function added
4/1/2020	v2.34.2.2	Add Nonlinearity Correction Function

2-2-1. v2.34.1.0

DATE: 4/9/2015

Issue:

- Shutter operation error
- spReadEEPROM function memory error
- Development environment update
- New API Function added
- spGetWLTable function error fix
- Phenomenon detected as malicious code in some vaccine programs
- SM304 data upside down code added

Fixed:

- Adds delay after changing the position due to a malfunction when the shutter is operated for a long time or when it is driven continuously rapidly.
- Fixed memory error when splitting a string in the spReadEEPROM function
- Development environment update and 64-bit build environment added
- Visual Studio 6.0 > Visual Studio2012
- Fix order count error when calculating polynomial in spGetWLTable function
- It is corrected by checking that it is detected as malicious code in the anti-virus program due to some setting values during the Visual Studio update process.
- SM304 data upside down code added to spReadDataEx function

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New Function :

- spGetDevsNew
- spSetIntMod
- spSetExtEdgeMode
- spDevInfo
- spGetModel
- spGetWLTable
- spInsShutter

2-2-2. v2.34.2.1

DATE: 2/18/2020

Issue:

- SM304 Base Line Correction function added

Fixed:

- New function added for SM304 Base Line Correction function
- The Base Line Correction function adjusts the baseline to intensity 7000 using the measured data at the time of application and applies gain x1.5.
- Base Line Correction applied when spSetTrgEx, spSetDbllntEx, spSetIntEx function is called is automatically cleared.

New Function :

- spBaseLineCorrection
- spBaseLineCorrectionClear

2-2-3. v2.34.2.2

DATE: 4/1/2020

Issue:

- Add Nonlinearity Correction Function

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Fixed:

- New function added for nonlinearity correction function
- Ability to read and correct Nonlinearity Coefficient values stored in EEPROM

New Function :

- spReadDark
- spReadNLCDataEx