



March 1, 2005: Release AvaSoft 6.2.1 for AvaSpec-102-256-1024-2048 and AvaSpec-2048FT

AvaSoft 6.2.1 for AvaSpec spectrometers has been released and can be downloaded free of charge from our website www.avantes.com.

The change in this software version compared to AvaSoft 6.2 will not be visible at first sight in AvaSoft, because the difference has been implemented in the dynamic link library avs.dll and new firmware of the AvaSpec spectrometers. The new avs.dll version 2.1 supports onboard averaging for spectrometers with ≤ 2 channels and firmware version IE3A. All single and dual spectrometers shipped from March 2005 (serial numbers starting with "0503....." and upwards) will use this firmware version IE3A.

The firmware for all single and dual spectrometers before March 2005 can be upgraded to IE3A if needed. To do this, the spectrometer must use the 12V power supply (not USB powered) and the RS-232 interface (male/female 9 pins cable to RS-232 port). Furthermore a jumper needs to be set at the electronic board during the firmware upload. Avantes supplies the firmware upgrade software free of charge. If you want Avantes to do the firmware upgrade, a small amount will be charged. Please contact Avantes if you want to receive the Avaloader software, or if you need an RMA number to ship the spectrometer back to Avantes for the firmware upgrade.

The new firmware IE3A and avs.dll version 2.1 have been developed in such a way that the new dll can also be used for spectrometers with old firmware versions, and the old avs.dll versions can also be used for spectrometers with the new IE3A firmware.

Why using onboard averaging?

In previous versions of dll/firmware, the averaging of the spectra was done by the dll at the PC. The reason for this is that the onboard memory space is too small to store the average for up to eight spectrometer channels. However, there is enough space to add the spectra for up to two spectrometer channels. The current onboard average implementation can therefore be used for all single and dual channels spectrometer systems. For spectrometers with more than two channels, the averaging is still done by the dll. Time measurements showed that with a high number of averages the time per scan has become almost twice as fast by using onboard averaging (AvaSpec-2048, full spectra, USB transfer). The speed increase is caused by the fact that less bytes need to be transferred from the spectrometer to the PC: the spectrum is transferred only once, after the spectrometer has already collected all NrOfAverage spectra. Because onboard averaging is faster, a higher number of averages can be taken during the same timespan that was used with the old firmware/dll, and therefore the noise will be reduced.

Another advantage of the new version is that the maximum number of scans to average has been increased from 1024 to 32767. If enough time is available this increase can help to reduce the noise even further.

To verify the spectrometer firmware and avs.dll version, click the Help-About menu option in AvaSoft 6.2.1.



August 24, 2004: Release AvaSoft 6.2 for AvaSpec-102-256-1024-2048 and AvaSpec-2048FT

AvaSoft 6.2 for AvaSpec spectrometers has been released and can be downloaded free of charge from our website www.avantes.com. This document summarizes the main new features in AvaSoft 6.2. For detailed information about the new features, you can download the new “AvaSoft 6.2 for AvaSpec” Manual from our website.

New features in AvaSoft-Basic (also available in FULL version)

- Multiple USB port support. If more spectrometers have been connected to one computer, multiple instances of AvaSoft can run simultaneously, each controlling another spectrometer.
- Under “View”, the option “Progress Bar Enable” has been added. By activating this option, a progress bar will be displayed in the graph if scans require more than one second processing time (because of a long integration time and/or a high number of average).
- Saturation detection. If one or more pixels of the detector receive too much light (16383 raw A/D Counts), a label will be displayed in the statusbar to notify the user about this. In AvaSoft-Full, more features are available for notification and visualization of a saturated spectrum (see below).

Additional new features in AvaSoft-FULL

- Saturation detection can be set to different levels, and there are also different settings available for the notification about the saturated spectrum. The notification can be visualized graphically or logged to a small window which displays at which wavelength range the saturation occurs and at which spectrometer channel. Moreover, the saturation can be logged to a text file.
- FOS-2-INLINE-UV/VIS support. This 2-channel Fiber Optic Switch can be used to correct for system drift. One channel is connected to a reference sample and the other channel to the sample that needs to be measured. AvaSoft can regularly switch the channels (manually or automatically), and measure the deviation from 100% at the reference channel. This information can be used to compensate the measured data at the sample channel.

Additional new feature in AvaSoft-IRRAD

- The irradiance application in AvaSoft 6.2 has been completely renewed. It allows you to measure a lot more parameters than in previous versions. The colorimetric, photometric, radiometric and/or peak parameters can be displayed in an irradiance chart (includes a chromaticity diagram), or in time series mode. Typical LED measurement parameters have been added, such as Dominant Wavelength, Purity, Candela, FWHM, Centroid and Center Wavelength. Moreover, the photon application which can be used to calculate the number of photons received at a surface, has been included in AvaSoft-IRRAD as well.



November 5, 2003: Release AvaSoft 6.1 for AvaSpec-102-256-1024-2048 and AvaSpec-2048FT

AvaSoft 6.1 for AvaSpec spectrometers has been released and can be downloaded free of charge from our website www.avantes.com. This document summarizes the main new features in AvaSoft 6.1. For detailed information about the new features, you can download the new "AvaSoft 6.1 for AvaSpec" Manual from our website.

New features in AvaSoft-Basic (also available in FULL version)

- Under "File – Convert Graph", an option has been added which is called "To ASCII equi distance". This option can be used if the complete, or a part of the spectrum needs to be converted with an equal spaced wavelength interval at the x-axis. The user defines the wavelength range and the wavelength interval.
- Under "View", the option "Grid Enable" has been added. By activating this option, a grid will be displayed in the graph.

Additional new features in AvaSoft-FULL

- Support of the AvaSpec-2048FT. The AvaSpec-2048FT is a new spectrometer type with a very fast response to an external trigger signal to start data acquisition (1.26 to 1.30 microseconds). Moreover, this spectrometer can be used to control the delay between firing a laser pulse and the start of the integration time. This delay period can be set in the software between -42 ns and 2.7 ms, with a 42 ns resolution. Customers utilizing Laser Induced Breakdown Spectroscopy (LIBS) and fluorescence applications with pulsed sources now have true flexibility in controlling the timing of excitation signals and response signal measurement

Bug Solved

In AvaSoft 6.0, the requests to send data from spectrometer to PC was not stopped if the STOP button was clicked. As a result, the yellow LED at the front side of the AvaSpec kept on flickering which indicated the continuous stream of data that was being transmitted. On some computers this caused the error that after closing down the application, it could not be restarted because the USB port was still in use. This problem has been solved in AvaSoft 6.1.



July 1, 2003: Release AvaSoft 6.0 for AvaSpec-102-256-1024-2048

AvaSoft 6.0 for AvaSpec spectrometers has been released and can be downloaded free of charge from our website www.avantes.com. This document summarizes the main new features in AvaSoft 6.0. For detailed information about the new features, you can download the new "AvaSoft 6.0 for AvaSpec" Manual from our website.

New features in AvaSoft-Basic (also available in FULL version)

- Under "Setup-Wavelength Calibration Coefficients" you can enter for each spectrometer channel, the wavelength for which you want to transmit the data from spectrometer to computer. This option can be used for a faster data transfer and to reduce the file size for the saved files.
- New file format. Files (saved spectra) that have been saved with AvaSoft 6.0 include the following additional information compared to former AvaSoft versions:
 - wavelength calibration coefficients of spectrometer
 - serial number of spectrometer
 - first and last pixel in the total range for which data was saved

This new format makes it possible to compare spectra that have been saved (in AvaSoft 6.0) with different spectrometers in the same graph. It also makes it possible to display these spectra even when you don't have a spectrometer connected (AvaSoft will start in simulation mode, but with the option "File-Display Saved Graph", the spectra will be displayed with the correct values at the x-axis)

Additional new features in AvaSoft-FULL

- Writing your own script in Visual Basic style to describe a user defined History Channel Function. By using a script you can combine the output of different functions and create a new function with the script editor.
- In reflectance/transmittance mode you can use the option "setup-options-use custom reflection reference" to use a calibrated reference with known reflectance, so you will have a more accurate value e.g. for the color parameters. Default the reflectance/transmittance = 100% for the reference.
- The Correct for Dynamic Dark has been improved, such that the data will be corrected in one scan. In previous versions of AvaSoft, the algorithm took 80% of earlier scan into account which caused the spectrum to become stable only after about 5 scans after startup.
- An option has been added to change the transmittance mode into a reflectance mode.
- A very hard to reproduce bug has been solved which caused under certain settings and only at certain computers an access violation error when clicking the Exit button to leave the History Channel Functions



Additional new feature in AvaSoft-COL

- The color application in AvaSoft 6.0 allows you to choose between the 2 and 10 degrees Standard Observer angle. In previous versions of AvaSoft, the 2 degrees angle was the only possibility.

New add-on applications available for AvaSoft-FULL

- AvaSoft-CHEM has been developed to enable on-line concentration measurements with a spectrometer system. If a few samples with known concentration are available, these can be used to measure the absorbance. These absorbance values can be used in AvaSoft-CHEM to calculate a linear (or second order) calibration line. Then, this calibration line is used to measure the concentration of unknown samples or to measure a changing concentration against time. AvaSoft-Chem can display and save the calculated concentration in two ways:
 - The concentration can be displayed on-line in a separate display window, for up to eight spectrometer channels (if available).
 - Up to eight history channels functions can be selected to display and save concentration values against time. This application can be combined with the Excel and Process-Control applications.
- AvaSoft-Photon has been developed to measure the spectral distribution of the number of photons in the light that is being investigated.