

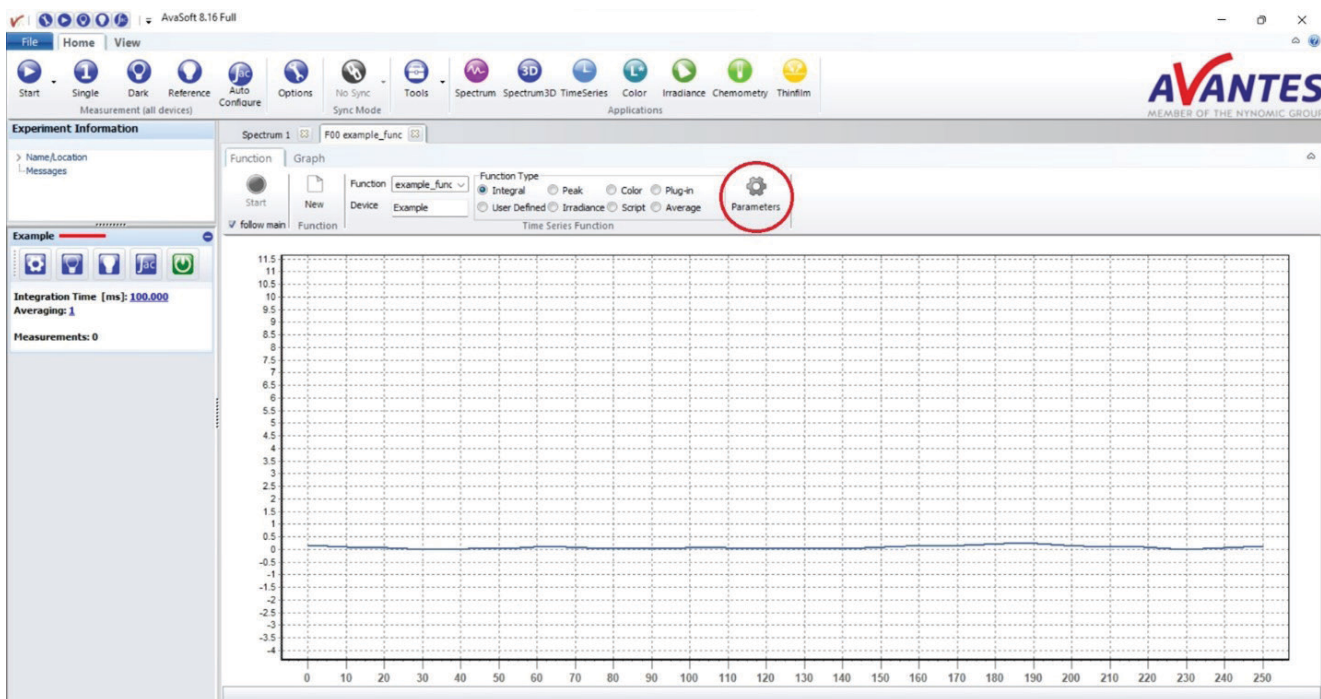
SPECTRAL TIPS AND TECHNIQUES:
**USING THE TIME SERIES MODULE IN
AVASOFT 8 - DATA & SIGNAL OUTPUT**



INTRODUCTION AND STEPS

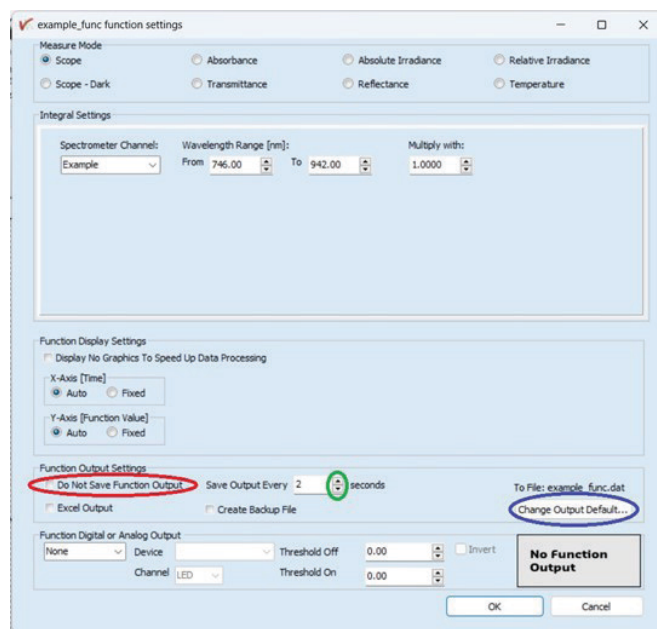
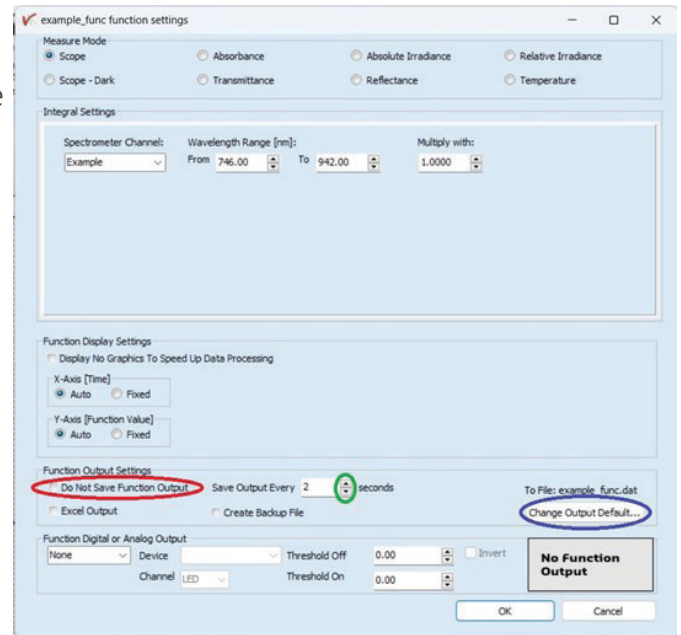
In our last guide, we discussed the basic functionality of the TimeSeries module, including the peak, average, and integral function types, adjusting the measure mode for each function type, and adjusting the function display settings. Herein, we will continue our discussion of the TimeSeries module by reviewing the Function Output Settings and Function Digital or Analog Output, which control data output and signal output, respectively. The data outputs can be used to save data as a .dat or Excel file, and the signal outputs can be used to send TTL signals to other electronic devices. Below is a short guide covering the data and signal output functions of the TimeSeries module in AvaSoft 8. A future guide will cover the more advanced Script and User Defined function types within this module.

For a review on the basics of the TimeSeries module and creating and editing functions, see our previous guide. This guide will be focused on the output parameters of the function, which can be accessed by clicking the "Parameters" button to the right of the Function Type (circled in red below).

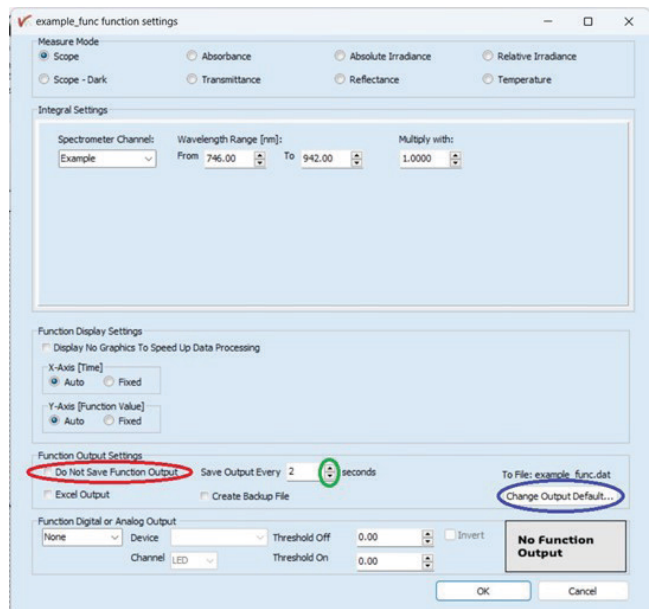


In the Parameters window, the data output of the function can be adjusted in the Function Output Settings box. By default, "Do Not Save Function Output" will be enabled (circled in red below). By disabling this, the window will populate with options for how often the output should be saved to the file, if a backup file should be created, the name of the file, and the location of the file. In the "Save Output Every ... seconds" dialog box, only numbers can be used as inputs. To obtain saving intervals at a resolution less than a second, use the arrows to add a tenths digit to the save interval (circled in green below). Higher resolution intervals such as milliseconds can now be accessed in the save interval. Additionally, inputting a value of zero saves data after every scan. By default, the output file will be a .dat file. To also save the data in an Excel file, check the box next to Excel Output. Checking the box next to Create Backup File will create a .bak file as a backup file for the saved data. To change the file name or the file save location, click the "Change Output Default..." button (circled in blue below). After doing so, the file name following "To File:" will update to the new file name.

Along with data output, the TimeSeries module can also be used to send out digital and analog signals from the spectrometer based on threshold values of the measurement. This functionality can be accessed in the Function Digital or Analog Output box. Either a digital or analog output option can be selected (circled in red below). The digital output option allows the user to select from one of ten digital output channels to send a signal (circled in green below). These channels are assigned to specific pins on the spectrometer's IO port, which can be found in the AvaSoft manual. It should be noted that these pin assignments are only valid for spectrometers with 26-pin IO ports. Any spectrometers with 10-pin IO ports, such as the Nexos, have different pin assignments that can be provided upon request. Under Device, simply select the spectrometer that is being used for the signal output. For the standard digital output, no signal will be sent unless the measurement falls between the Threshold Off and Threshold On values, with Off being the minimum and On being the maximum value. This is demonstrated in the Function Output Graph on the right side (circled in blue below). Any value falling between the threshold values will result in a 5V signal being sent out of the assigned pin. If the Invert box is checked, the 5V signal will be sent out unless the measurement falls within the threshold range, in which case the signal will stop being sent. The threshold values can be manipulated to extreme high or low values to result in a signal always being sent once above or below a target value.



Alternatively, the analog output can be used to send a linearly variable voltage from 0V to 5V (in 0.02V increments) based on the range minimum and maximum. Notice that with the analog output selected, the Function Output graph on the right side changes to reflect this (circled in red below). This output type only features two output channels, which have assigned pins that can be found in the AvaSoft 8 manual. This output type also cannot be inverted.



With these steps complete, the data and signal output functions can be utilized in the TimeSeries module. Please reach out to our support team at support@avantes.com for further explanation or troubleshooting options.

SUPPORT & ADVICE

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With a long history of consulting with clients across various industries, Avantes is an **experienced partner** equipped to guide customers who want a solution tailored to their application and research needs.

Through our headquarters in the Netherlands and offices in the USA and China, our sales engineers work closely with our customers to find the most ideal measurement solution. In addition to our direct offices, Avantes has a **worldwide network** of distributors in over 35 countries ready to assist you. All of our products are made in our own production facility in the Netherlands.



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