

# SPECTRA**DAQ-200**

## Driver Installation

The CD-ROM included with the device contains the SpectraPLUS software installation and also the device drivers for the SpectraDAQ-200. The filename is:

D:\SpectraDAQ\_Driver\SpectraDAQ-200\_DriverSetup.exe

Procedure:

- 1) Run the driver setup utility
- 2) When prompted, connect the USB cable from the DAQ to the computer
- 3) Follow the steps as directed by the driver installation utility

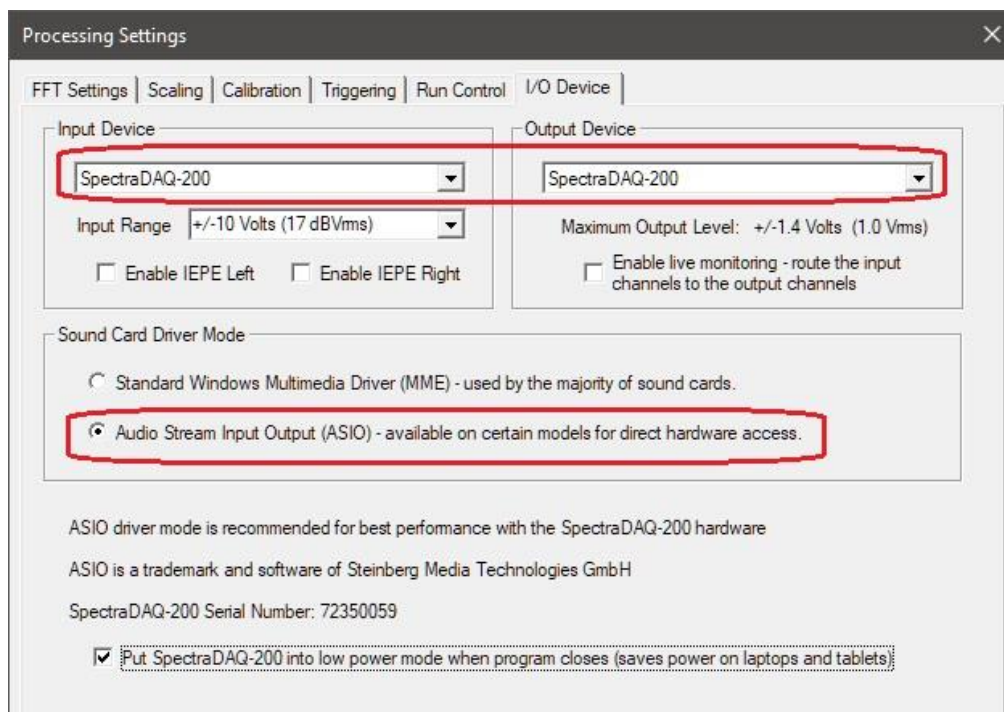
The latest drivers can also be downloaded from [www.spectraplus.com/Downloads.htm](http://www.spectraplus.com/Downloads.htm)

## Setting up the analyzer

After the drivers have been successfully installed, launch the SpectraPLUS analyzer software. The following procedure applies to SpectraPLUS-RT and SpectraPLUS-SC:

### Selecting the device:

- Go to the <Options><Processing Settings> menu (or press the F4 key)
- Click the “I/O Device” tab
- Select ASIO driver mode - this provides the best performance and avoids sampling rate conversion issues with the MME driver mode.
- Select “SpectraDAQ-200” for both the Input and Output Devices



### Setting the input voltage range

When the SpectraDAQ-200 is selected as the input device you will see a list box allowing you to select the input

voltage range. This controls the input gain of the DAQ – the setting applies to both input channels. You have the following choices:

- +/-10 Volts (17 dBVrms)
- +/-2.5 Volts (5 dBVrms)
- +/-625 mVolts (53 dBmVrms)
- +/-156 mVolts (41 dBmVrms)

The input range is the maximum signal level that can be measured without overloading (clipping) the A/D converters. If the input signal level exceeds the input range the analyzer will show a bright red line on the lower status bar – if this occurs, increase the input range setting. An oscilloscope probe can be used for measurements greater than 10 volts.

When the input range set to 156 mVolts, the minimum signal level that can be measured is approximately 1 microvolt. This means that the overall measurement range of the DAQ is over 130 dB.

### **IEPE power**

Measurement microphones, accelerometers and other transducers require power to operate. An industry standard has been developed called IEPE\* which provides 24 Volts DC at 4ma constant current on the center pin of the BNC input connector. This simplifies the wiring and eliminates the need for an external power supply and associated cabling.

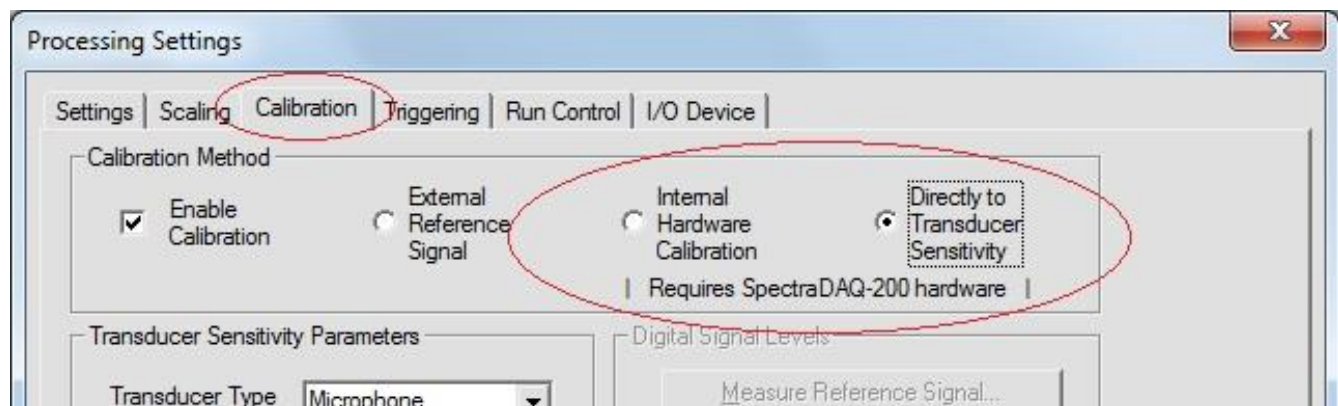
To enable IEPE power simply check the selection box.

\*IEPE stands for Integrated Electronic Piezoelectric. It is also known as ICP (a trademark owned by PCB Electronics) or CCP (Constant Current Power).

**Enable Live Monitoring** – this will allow you to connect headphones or speakers (via amplifier) to monitor the input channels. The output is routed to the BNC connector labeled Output L and also to the 3.5 mm labeled “Stereo Output”

### **Calibrating the Analyzer**

Go to the <Options><Processing Settings> menu (or press the F4 key) and click the “Calibration” tab



Because the DAQ input voltage is known, direct calibration methods can be used:

#### **Internal Hardware Calibration**

Select the desired engineering units (Volts, Millivolts or dBu).

#### **Directly to Transducer Sensitivity**

Select the desired transducer type (microphone, accelerometer, hydrophone or custom).

Enter the transducer sensitivity from the datasheet provided by the transducer manufacturer. For microphones the transducer sensitivity is in mV/PA, for accelerometers it is mV/G, for hydrophones it is dB re V/uPA. The analyzer will convert the detected voltage to the corresponding engineering units based on this sensitivity.

**Notes:**

- If you change the input range, the analyzer will automatically recalculate the calibration values.
- The spectral data can be displayed in either Log or Linear formats – this is set under the “Scaling” tab.
- The maximum output voltage of the DAQ is 1.4 Volts (1 Vrms). Click the “Level” button on the signal generator to set the desired signal level.

**Sampling Format**

Go to the <Options><Processing Settings> menu (or press the F4 key) and click the “Settings” tab. The SpectraDAQ-200 supports the following sampling rates:

4000, 6000, 8000, 12000, 24000, 48000, 96000, 192000

Both 16 and 24 bit sampling are supported – use 24 bit for best performance.

**Front Panel Connectors**

BNC Input 1/L – Left analog input channel

BNC Input 2/R – Right analog input channel

BNC Output – Left analog output channel

**Rear Panel Connectors**

3.5mm stereo jack – Left and Right analog output channels

USB – connection to computer (use the USB 3.0 cable supplied with the device)

Digital I/O In – RJ45 jack with input control lines

Digital I/O Out – RJ45 jack with output control lines

RJ45 connector pinouts (colors based on standard internet cable)

1 In/Out 0+ Orange/White

2 In/Out 0- Orange

3 In/Out 1+ Green/White

4 In/Out 2+ Blue

5 In/Out 2- Blue/White

6 In/Out 1- Green

7 +5V Brown/White

8 GND Brown

The Digital I/O lines are used with the COM API automation interface for process control applications.

**Licensing**

The SpectraDAQ-200 hardware has license key information embedded on the device. Go to the <License><Status & Authorization> menu to change the license method. Additional options can be added to the DAQ license – contact your software vendor for further details.

For technical questions or problems, please contact:

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