

SAMPLE SHUTTLE ACCESSORY



User's Guide

Release History

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Introduction

The Sample Shuttle enables you to automatically locate either of two sample slides in the optical beam of the spectrometer without opening the sample compartment. This prevents carbon dioxide and water vapor from entering the sample compartment each time you switch from a background scan to a sample scan.

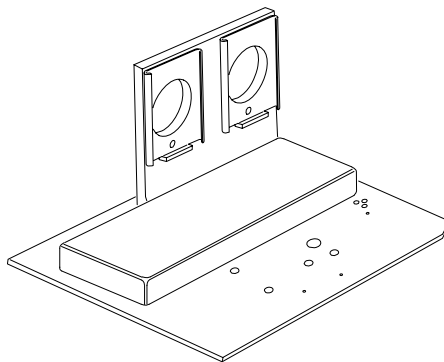


Figure 1 The Sample Shuttle Accessory

How is the Sample Shuttle used?

The main purpose of the Sample Shuttle is to enable the use of an *interleaved scan cycle*. This is where the shuttle switches between the two positions to enable a new background to be collected with each sample, automatically.

The shuttle also enables an accessory to be interchanged in the beam without disturbing the alignment of the accessory.

How to Install the Accessory

The Sample Shuttle can be simply installed into the sample compartment of the spectrometer, first removing any other sampling accessory currently fitted.

To remove the current accessory and install the Sample Shuttle accessory:

1. Raise the sample cover (Figure 2a).
2. Reach in under the base of the current accessory and pull the blue release handle towards you to release the accessory (Figure 2b).
3. Now simply slide the accessory out of the sample area.
Store it in a safe place for future re-use.
4. Slide in the Sample Shuttle accessory, rest the back of it on the ledge in the sample area and slide it into position (Figure 2c). Push it firmly home to ensure that the multiway connector on the rear of the Sample Shuttle accessory mates properly with the spectrometer connector.

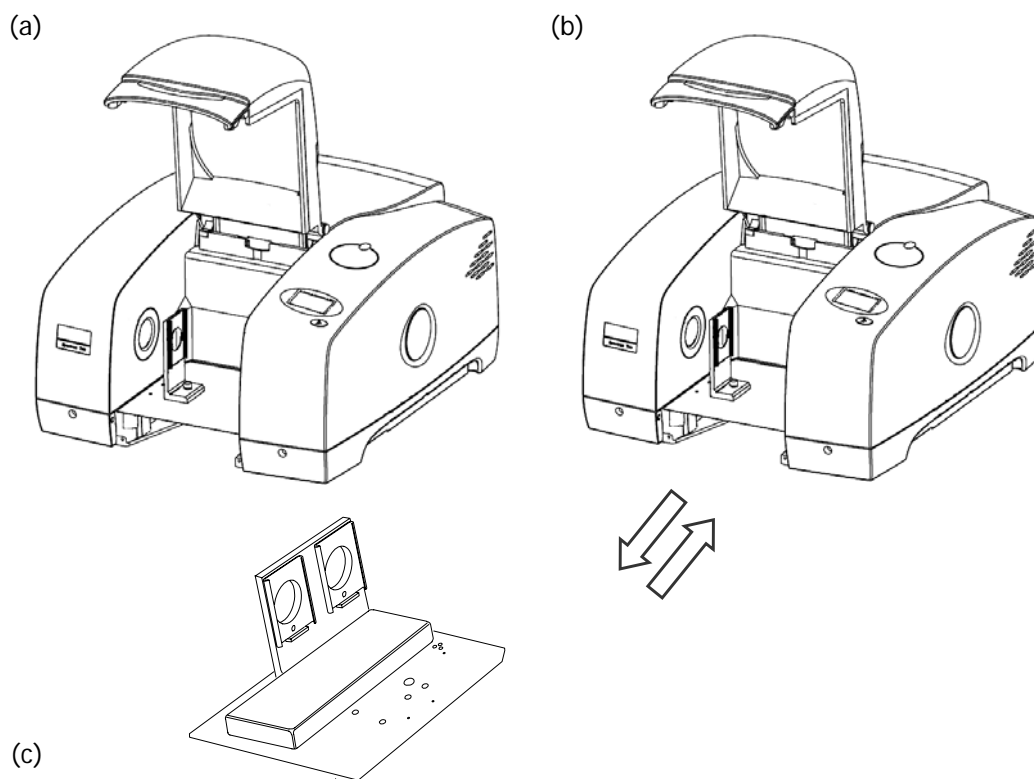


Figure 2 Removing the Sample Slide and installing the Sample Shuttle



WARNING

When the Sample Shuttle locks into place it aligns itself, which means that the slide holder may move. Be careful that your fingers, tie, and so on are not trapped by the movement.

5. Lower the sample cover.

Accessory detection in Spectrum Software

When the Sample Shuttle is installed, the software detects the presence of the accessory and updates to show that you now have the Sample Shuttle positioned (Figure 3).

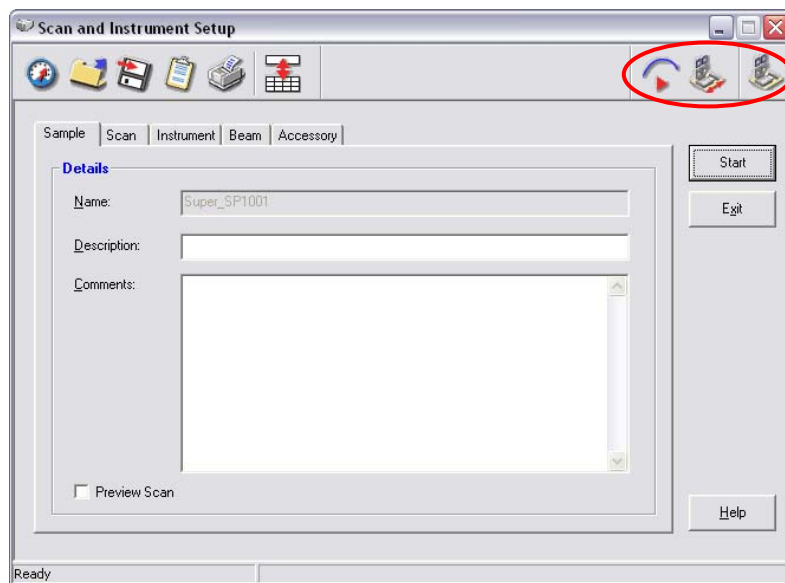


Figure 3 Scan and Instrument Setup dialog with Shuttle icons circled

Your accessory is now ready for use.

Accessory detection in Spectrum Express Software

When the Sample Shuttle is installed, the software detects the presence of the accessory and updates to show that you now have the Sample Shuttle positioned (Figure 4).

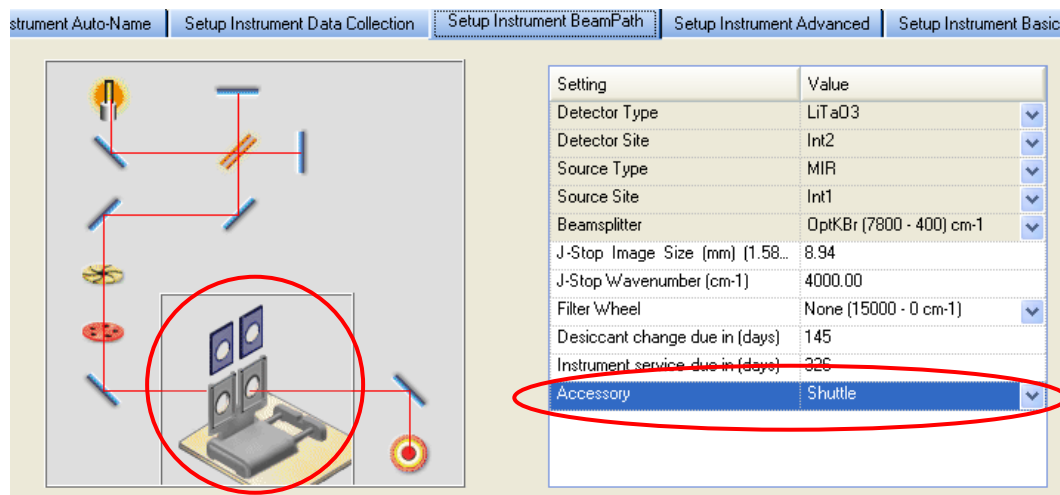



Figure 4 Setup Instrument BeamPath tab with the Shuttle accessory circled

Your accessory is now ready for use.

Using the Accessory with Spectrum Software

Manually Moving the Shuttle

- Click on the shuttle tool  to move the shuttle from its current position to the other position (Figure 5).

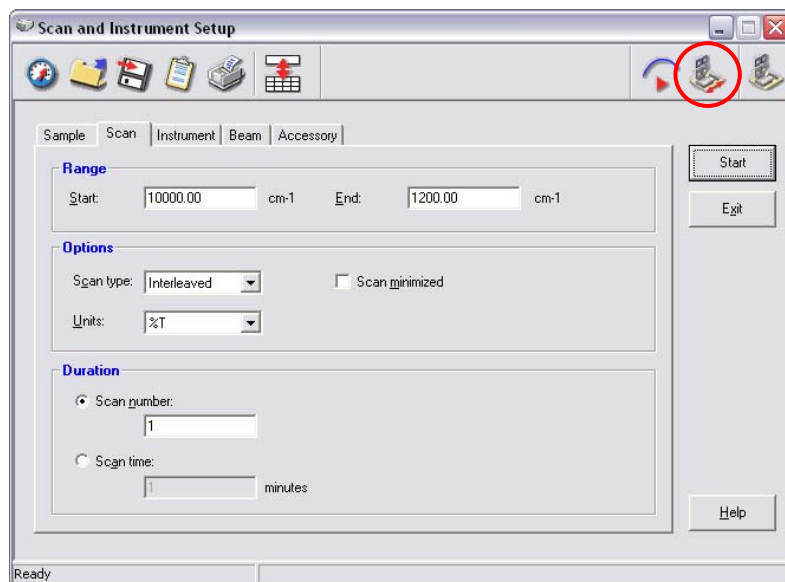


Figure 5 The Shuttle tool for manually changing position

Automatically Moving the Shuttle

1. To use the Interleaved mode, where the Shuttle automatically collects a background before scanning the sample, set the Scan type to **Interleaved** on the Scan tab (Figure 6).

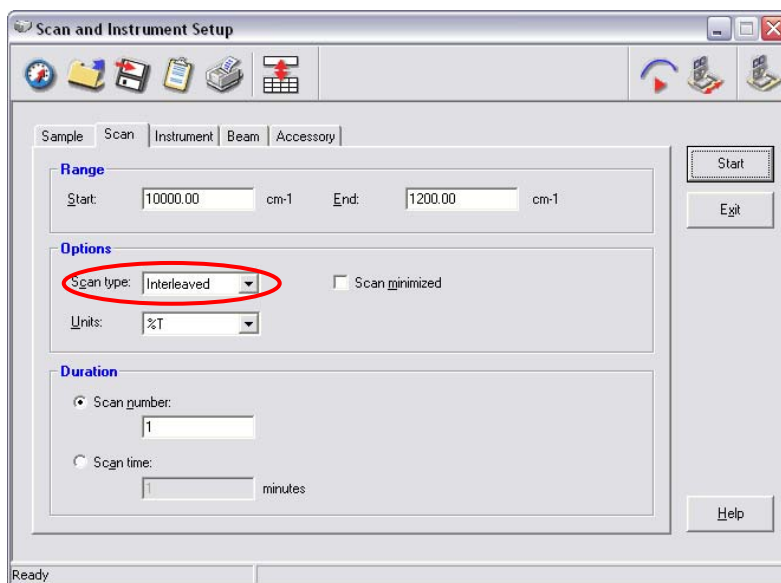


Figure 6 Selecting Interleaved mode

2. Place your sample in the front slide.
The back slide is used for the background, as shown in Figure 7.

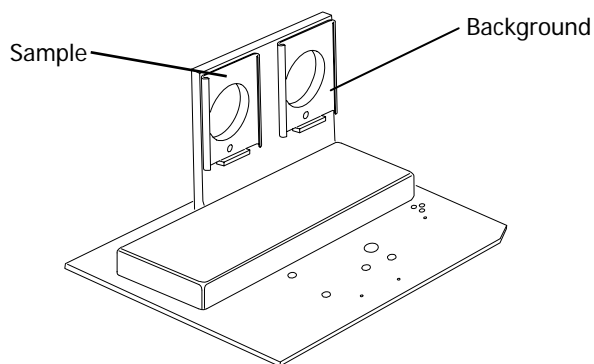


Figure 7 Sample and background slides

Performing a Scan

Sample setup

1. Select **Scan** from the Instrument menu.
2. Enter sample details, scan parameters and instrument settings.
The information shown on the dialog will depend on your user level.

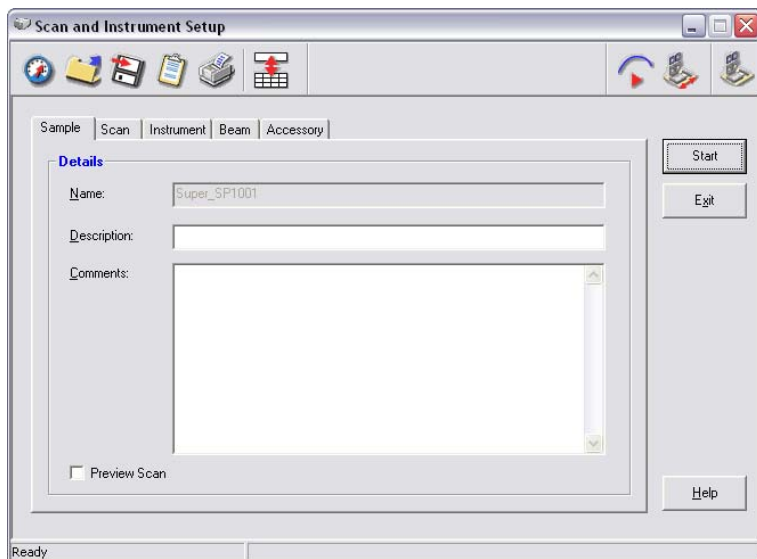


Figure 8 Scan and Instrument Setup dialog with Sample tab selected

Sample Shuttle setup

3. Ensure that **Interleaved** is selected if you want to perform an interleaved scan.

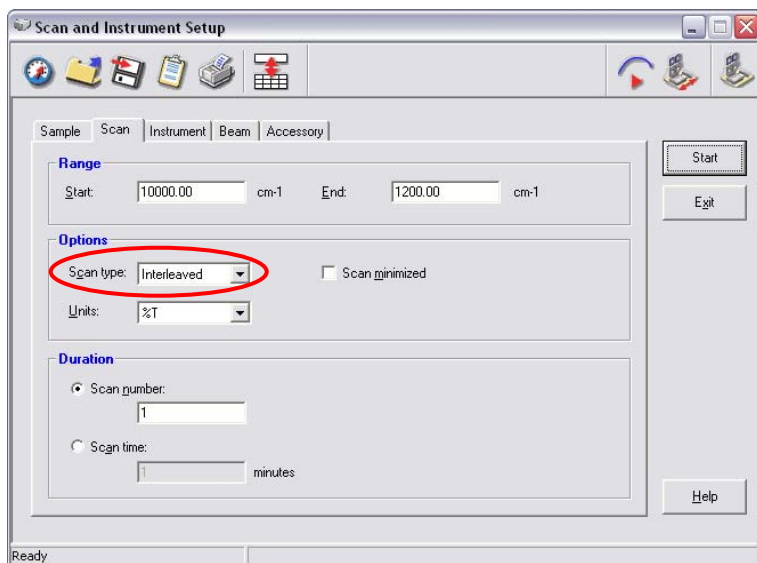


Figure 9 Scan and Instrument Setup dialog with Interleaved mode selected

4. On the **Accessory** tab, you can choose from predetermined configurations and set the **Sampling** type used, as required.

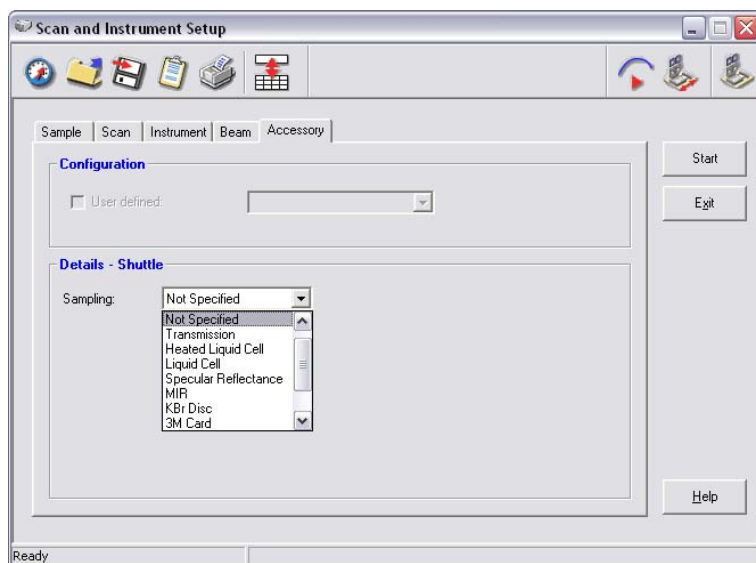



Figure 10 Selecting the Sampling type on the Accessory tab

5. Click **Start** to begin collecting data.

The Display tab is displayed as scans are collected and then the spectrum appears in the graph window in the main application.

Although Spectrum automatically alerts you when you need a new background, and can be configured to request a new background at set intervals (using Data Collection Setup), if you want to collect a background, use the **Scan type** option on the Scan tab or click .

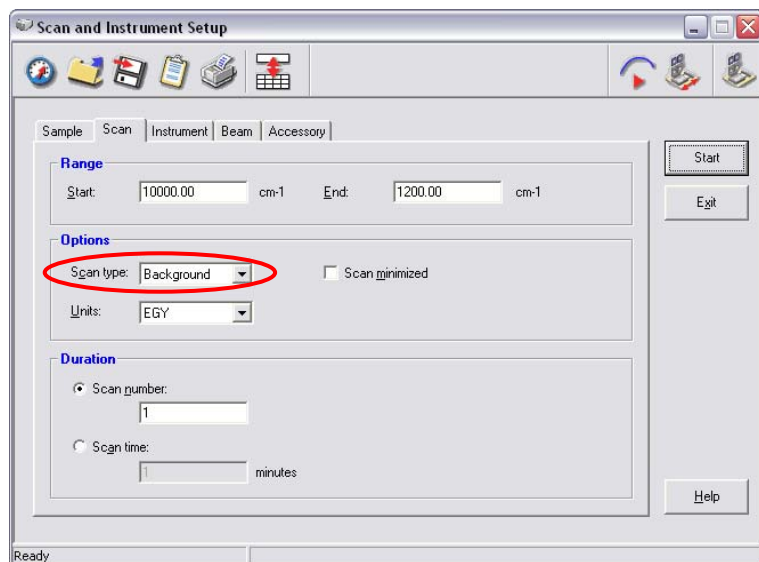


Figure 11 Scan tab with Background selection circled

For further information on collecting, viewing and processing spectra using Spectrum software, refer to the Help file that you can access from the Help menu.

Using the Accessory with Spectrum Express Software

Manually Moving the Shuttle

Use **Move Shuttle** on the Setup Instrument Basic tab to move the shuttle from its current position to the other position (Figure 12). If you select **OUT**, the back slide is in the beam path. If you select **IN**, the front slide is in the beam path.

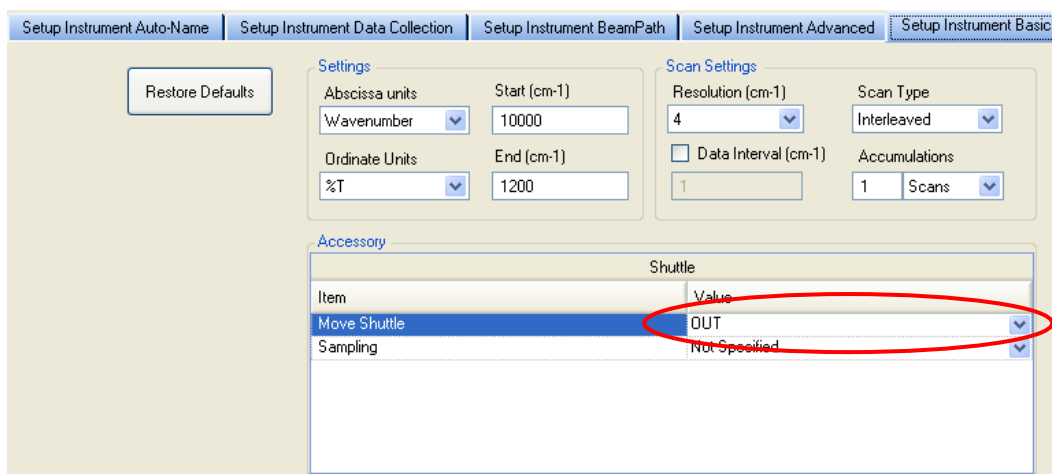


Figure 12 Manually changing the Shuttle position

Automatically Moving the shuttle

1. To use the interleaved mode, where the shuttle automatically collects a background before scanning the sample, set the Scan Type to **Interleaved** on the Setup Instrument Basic tab (Figure 13).

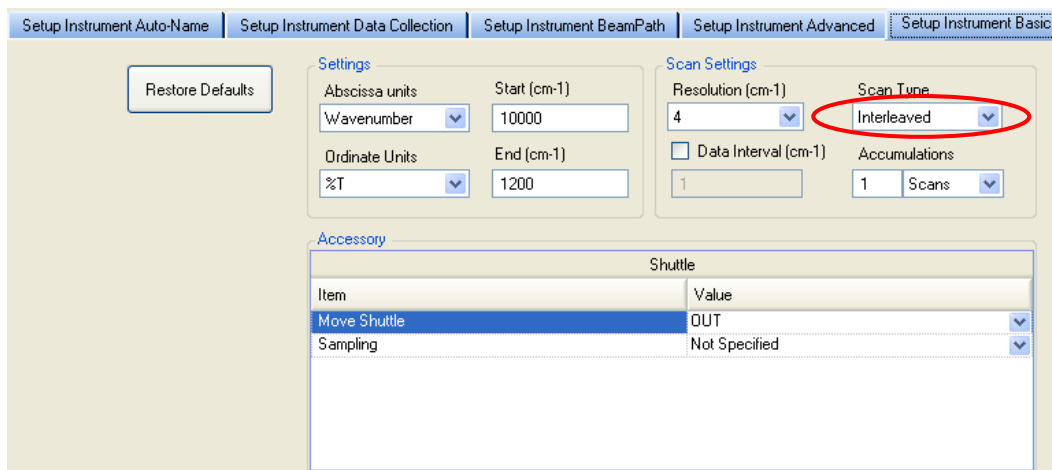


Figure 13 Selecting Interleaved as the Scan Type

2. Place your sample in the front slide.
The back slide is used for the background, as shown in Figure 7.

Performing a Scan

1. Check and set the instrument parameters, such as the **Start** and **End** points of the scan range and the **Accumulations** required, and, if required, enter a unique **Sample ID** and **Description** in the Instrument Settings toolbar.

The toolbar contains the following fields and controls:

- Start (cm-1): 4000
- End (cm-1): 450
- Accumulations: 1 Scans
- Sample ID: Administrator 10
- Description: Sample 0
- Status bar: Ensure beam path is clear. Press [Scan] to continue.
- Icons: Scan, Help, Background, Monitor.

NOTE: The **Sample ID** and **Description** are automatically supplied by the AutoName function. See *AutoName* in the *Setup and Administration* book in the Spectrum Express Help file for more information.

To amend any value, select the parameter and enter your new value.


2. Ensure that **Interleaved** is selected as the Scan Type on the Setup Instrument Basic tab if you want to perform an interleaved scan.

The screenshot shows the 'Setup Instrument Basic' tab with the following settings:


- Settings:**
 - Abscissa units: Wavenumber
 - Start (cm-1): 10000
 - Ordinate Units: %T
 - End (cm-1): 1200
- Scan Settings:**
 - Resolution (cm-1): 4
 - Scan Type: **Interleaved** (highlighted with a red circle)
 - Data Interval (cm-1): ☐
 - Accumulations: 1 Scans
- Accessory:**
 - Shuttle:

Item	Value
Move Shuttle	OUT
Sampling	Not Specified

Figure 14 Selecting Interleaved as the Scan Type

3. If you wish, in the Accessory section of the Setup Instrument Basic tab you can select the **Sampling** type from the drop-down list of predefined configurations.
4. Click **Scan**  to begin collecting data.
By default, during scanning the sample data is displayed on the Live tab in the Viewing Area.
The completed spectrum is displayed on the Graph tab, and added to the current Sample View in the Data Explorer.

Although Spectrum Express automatically alerts you when you need a new background, and can be configured to request a new background at set intervals (on the Setup Instrument Data Collection tab), if you want to collect a background, set the Scan Type on the Setup

Instrument Basic tab to **Background** or click .

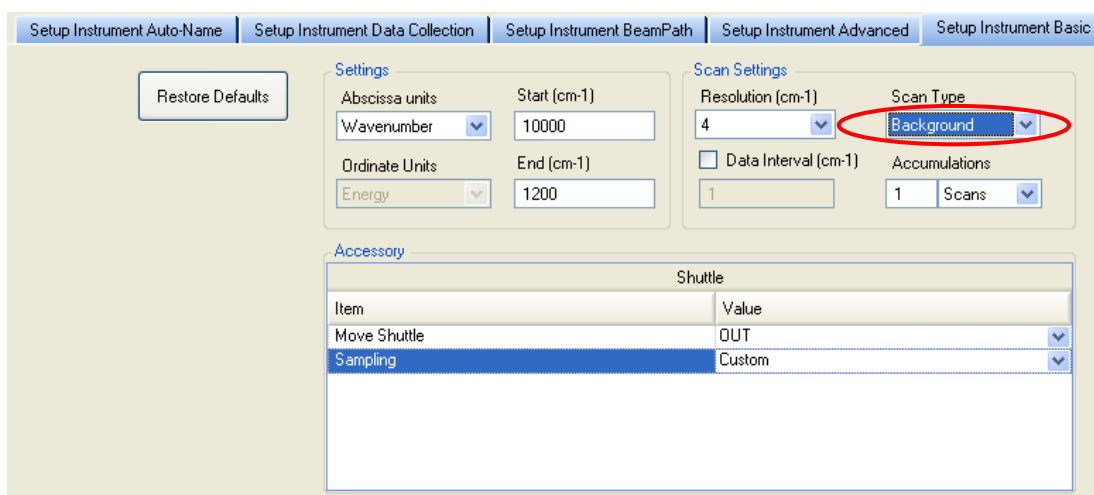


Figure 15 Selecting Background as the Scan Type

NOTE: If **Background** is selected as the **Scan Type** on the Setup Instrument Basic tab, the spectrum will be added to the Sample View.

For further information on collecting, viewing and processing spectra using Spectrum Express software, refer to the Help file that you can access from the Help menu.