



Scientific Software Technologies Center

FFS Data Processor

**Global analysis software in fluorescence fluctuation
spectroscopy**

Measurements Database

User Manual

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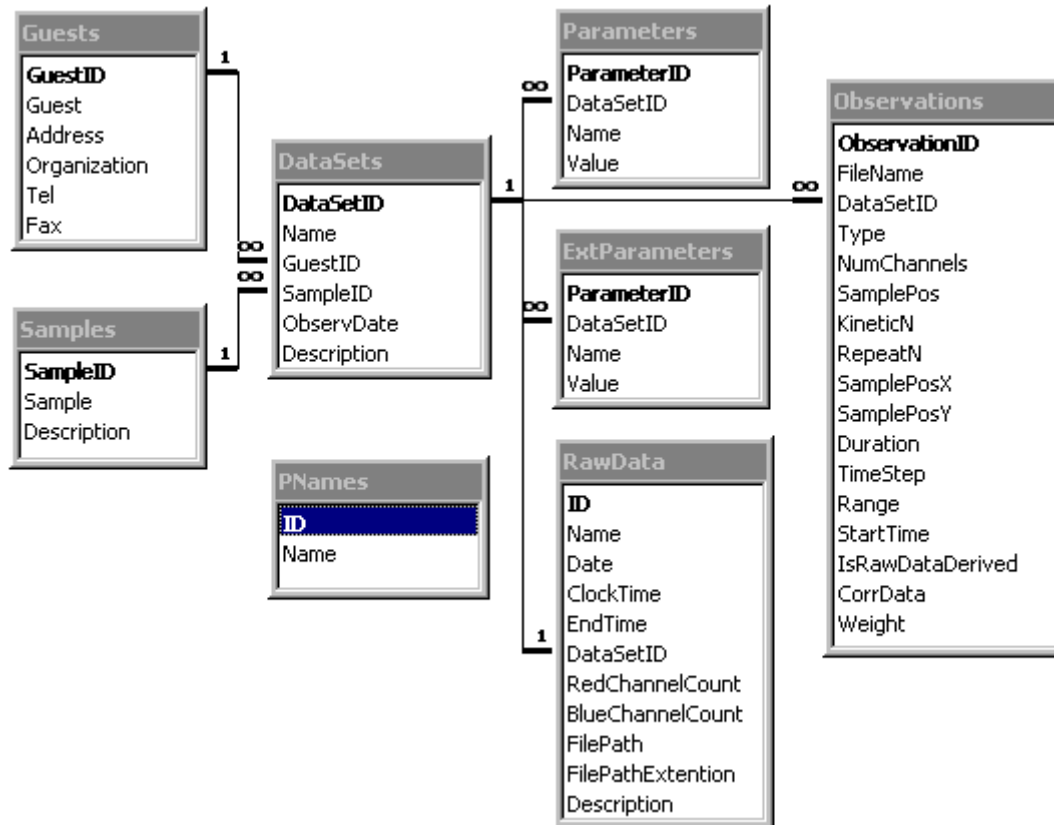
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About Measurements Database

Measurements Database, designed for economical storing and easy managing of experimental data, provides convenient and fast way of searching and retrieving information. This software let one to get rid of a great amount of paper needed to keep information about the measurements as well as to avoid routine manipulation with computer files, folders, etc.

Database consists of several tables with the automatically supported relationships between them. Each record in the [Observat table](#) describes particular measurement and contains such experimental parameters as Sample Position, Start Time, Duration, etc, as well as array of the measured data. Several records from the Observat table are related to one record in the [DataSets table](#) (relationship "many-to-one"). This relationship reflects the experimental configuration when measurements of the same sample under the same external conditions are being performed in series. In this case, certain number of particular measurements should be collected into a group corresponding to the investigated object. Information, which is the same for every

measurement within one group (like Guest, Sample, Date), is stored in the DataSets table as one record. Such relationship between the Observat table and the DataSet table, besides compressing of the information, allows to retrieve the whole set of measurements by selection only one record in the DataSet table. All parameters related to the DataSet and described all measurements within one group are stored in the [Parameters table](#). This table is related to the table DataSets by "many-to-one" relationship.



The ExtParameters (External Parameters) table is used for storing External parameters such as Temperature, Concentration and so on. Table ExtParameters is related to the DataSets table by "many-to-one" relationship, so it is possible to link a number of External parameters to the particular DataSet. Additional reason for constructing ExtParameters and PNames tables is the possibility of visualization of the fit parameters as a function of a particular External parameter. If a series of measurements, for example, at Temperature = 10C, 20C, 30C, ... was performed, one has to add a parameter 'Temperature' in the PNames table (if this parameter had not been entered before) and add a record in the ExtParameters table with the name 'Temperature' and Value = 10 and so on. The PNames table was designed in order to avoid mistakes while writing names of parameters. One should first enter the name of a new Parameter in PNames table than choose it from a drop-down list in the ExtParameters table.

There are two auxiliary tables in the database: table [Guests](#) and table [Samples](#). The first one contains information about person or organization who orders measurements, and the second one provides the detailed information regarding the explored sample. Both tables are related to the table DataSets by "one-to-many" relationship. Such a configuration makes possible to list all measurements performed for a particular person or a particular sample. At the other hand, all information about particular experiment (including personal information and detailed information about the sample) becomes available just by selecting one record in the DataSets table.

RawData table is used for storing raw data (large binary file contains photon arrival times or time lags). Each record in the RawData table contains the link to the correspondent DataSet (automatically created during the import of raw data file).

The main features of the database are:

- fast storing the series of files in the Database;
- importing the raw data;
- simulation of the raw data with constant intensity and given autocorrelation function;
- calculation of the statistical characteristics like autocorrelation, etc. from the raw data (with calculation of weight);
- convenient representation of the stored data;
- extensive possibilities for searching and filtering information;
- build-in two-dimensional graphical pre-viewer of measured data;
- form view and datasheet view of the tables;
- possibility to create new sets of tables allowing to keep data in different folders or computers within the local network, etc, and easily switch between them at run time;
- import and export of the experimental data and other information;
- quick deleting all records from the selected table;
- packing tables after deleting in order to reduce the size of the tables;
- checking and repairing the tables;
- generating and printing the reports on the base of the selected records.

Database supports data integrity and validity. All information concerning the defined object is stored in one record in table. The mechanism of data integrity forbids deleting a record from one table which is linked to the records in the other tables. Data validity guarantees that values stored in the tables are always valid by the checking of the range and type of the entered data. Database is protected from the accidental changing or deleting of information by the default forbidding of editing.

Database avoids data redundancy: each record has only one instance. It means that it is not required to enter information into the tables, if the same information is already stored in the database. User can just establish the relation between the entered and stored information. This feature is especially useful when one needs to update records in the database. The correction should be done only once at one point (where the changed information is stored) and then this update will take effect in all records which are related to the selected one.

Database provides extensive possibilities for searching information. The fastest way how to find a record by a specific field is by typing first symbols of this field in a special window. Cursor moves to the record with the field, which contains symbols matching the typed ones. The possibility to sort any table by any field is also supported.

User may also interactively create filter with complex conditions in order to decrease the selected number of records.

Such operations as looking through the records, deleting records, editing information are provided by [Database Navigator](#).

Starting Measurements Database

Starting Measurements Database can be started via

❖ Start button on the Windows Task Bar:

✍ Go to the Programs/FFS Data Processor/ and click the **Measurements Database** item;

✍ Choose Run and specify the path to FFSDB.EXE;

❖ Windows Explorer:

✍ Locate and double-click the FFSDB.EXE file (if you have performed a default installation, this file is located in \Program Files\SSTC\FFS Data Processor\Bin).

It is advisable to use Databases having administrative rights.

FFS Data Processor can also operate at the user rights with properly defined write permissions

and database options. There are four ways to do it:

1. Set modify (not only write) permission to the directory (and all subdirectories) where program is installed (normally it is C:\Program Files\SSTC\FFS Data Processor). Set also write permission to the root C:\ directory (where file PDOXUSRS.NET is located).

2. Open BDE Administrator (location path C:\Program Files\Common Files\Borland Shared\BDE\BDEADMIN.EXE), open the Configuration tab, then Drivers/Native/PARADOX, set the Net dir to any directory with write permissions (if you want to access data from the network, please share this directory for all users who can access database and additionally set System/INIT/LOCALSHARE to true)

3. Set modify permission to the directory where program is installed. Open Options dialog (Tools/Options... menu item) from FFS Measurements Database and set network directory to a folder with write permissions.

4. Open Options dialog (Tools/Options... menu item) from FFS Measurements Database and set network and private directory to folders with write permissions. Open Options dialog (Tools/Options... menu item) from FFS Analysis Database and set private directory to a folder with write permissions.

Note. Private directories of both databases must be different.

The last way is worst. Some database operations (packing tables, etc.) may not work properly in some cases.

Note: Users of Windows 7 can work with PARADOX databases without any limitations only if they are logged into using the Administrator account (not confuse with any other user account having Administrative rights). Use the way number 2 (preffered), 3 or 4 to work with Databases on Windows 7. There is one more solution of the problem: launch BDE Administrator with system administrator rights (using local menu command) just before opening Data Processor or any database.

Main Window

Main Window consist of the following components:

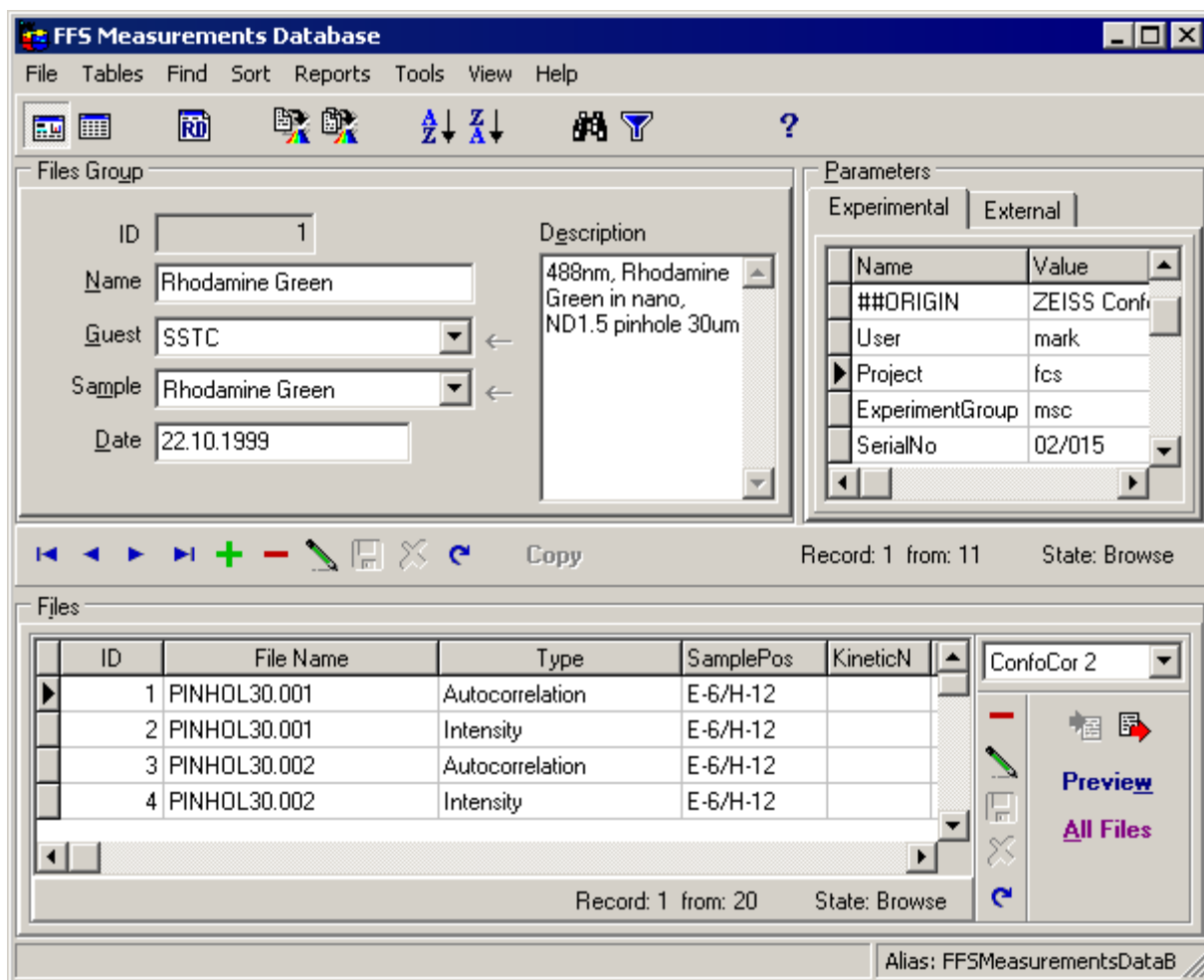
- ☞ [Menu](#)
- ☞ [Toolbar](#)
- ☞ [Files Group panel](#)
- ☞ [Files panel](#)
- ☞ [Parameters panel](#)
- ☞ *Status Bar*

An example view of the Database *Main Window* is given in the following figure:

Menu and Toolbar provide quick way to invoke the commands of the application.

Files Group panel represents information related to the whole set of files ([DataSets table](#)) and *Files panel* represents information for each file individually ([Observat table](#)). For more information about structure of the Database see [About Measurements Database](#).

Status bar, which is a horizontal area in *Measurements Database* below the *Files Panel*, provides information about the current state of application and any other contextual information. [Alias](#) of the current Database is displayed in the right part of the Status bar.



Menu

Main menu consists of following several popup items:

Items	Description
File	Contains menu commands for managing tables and importing/exporting data.
Tables	Contains menu commands for opening tables.
Find	Contains menu commands for finding information.
Sort	Contains menu commands for sorting tables.
Reports	Contains menu commands for previewing and printing automatically created reports.
Tools	Use the commands of the Tools menu for RawData Processing, communicating with FFS Data Processor and performing some service database functions.
View	Contains menu commands for managing the view of the opened tables.
Help	Contains menu commands for accessing the online Help and information about the copyright.

File menu

Use commands of the **File menu** for managing tables and importing/exporting data.

The **File menu** contains the following commands:

Commands	Description
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New Tables	Opens New Database dialog box to create a new empty Database (set of tables) allowing to keep data in different folders or computers within the local network. One have to specify the Alias for this Database during this operation.
Link Tables	Opens Link Tables dialog box for switching between Databases at run time.
Import	Imports Files Group(s) with all supplementary information from the selected database to the current Database. Opens Import/Export Data form to select the Database and needed Files Group(s).
Export	Exports Files Group(s) with all supplementary information from the current database to the selected Database. Opens Import/Export Data form to select the Database and needed Files Group(s).
Exit	Finishes the work with <i>Measurements Database</i> .

Tables menu

Use the commands of the *Tables menu* for opening tables.

The *Tables menu* contains the following commands:

Commands	Description
Guests	Opens Guests Form .
Samples	Opens Samples Form .
Files	Opens Files Form .
Raw Data	Opens Raw Data form .

Find menu

Use the commands of the *Find menu* for finding information.

The *Find menu* contains the following commands:

Commands	Description
Quick Search	Displays a search box for the corresponding field. If you want to find quickly the necessary record you should type the first few characters and press Enter. In this case the application will automatically select the first record that contains at the beginning the characters, which correspond to the typed ones. For the Numeric, Logical and Data/Time fields you should type the whole value for the correspondent field. To close the search box, press key Esc.
Filter	Opens Filter dialog box that allows creating the filter that can be applied to the selected table. If this filter is applied, the only table records that correspond to the filter criteria will be displayed.
Remove Filter	Removes Filter from the selected table.

Sort menu

Use the commands of the *Sort menu* for sorting tables.

The *Sort menu* contains the following commands:

Commands	Description
Ascending	Sorts records of the table in ascending order by the selected field.
Descending	Sorts records of the table in descending order by the selected field.

Reports menu

Use the commands of the *Reports menu* for setting the page setup, previewing and printing automatically created reports.

The Reports menu contains the following commands:

Commands	Description
Page Setup	Opens Reports Options dialog box and display the " Page setup " page.
Files Group Report	Previews the Report. Opens Reports Options dialog box to set the filter on the DataSets table for selecting the records which will be included into the Report.

Tools menu

Use the commands of the Tools menu for communicating with FFS Data Processor and performing some service database functions.

The Tools menu contains the following commands:

Commands	Description
Pack Table	Reduces size of a table by releasing any free space. Packing can be used for repairing the table, because the table is restructured during this operation. Opens Select Tables dialog box to select the table.
Pack All Tables	Reduces size of all tables by releasing any free space. Packing can be used for repairing the tables, because the tables are restructured during this operation.
Empty Table	Deletes all records from a table. Opens Select Tables dialog box to select the table.
Empty All Tables	Deletes all records from all tables.
Check Table	Checks a table. Opens Select Tables dialog box to select the table.
Repair Table	Repairs a table. Packing tables can be used also for repairing the table. Opens Select Tables dialog box to select the table.
Check and Repair Tables	Checks all tables and repairs them if they are corrupted. Packing tables can be used also for repairing the tables.
Preview Graphs	Opens Preview Window for two-dimensional preview of measured or calculated from raw data statistical characteristic as well as standard deviations and relative standard deviations of each point of the statistical characteristic.
Options...	Opens Options Dialog box to set Borland Database Engine internal variables.
Send Files to FFSDP	Sends selected files in the Files panel to the FFS Data Processor.
Send Files Group to FFSDP	Sends all files of the current Files group to the FFS Data Processor.
Commit Changes	Ends the default transaction and reconnects the Database. This command prevents you from losing your changes you made after the abnormal program termination.

View menu

Use the commands of the *View menu* for managing the view of the opened tables.

The *View menu* contains the following commands:

Commands	Description
As Form	Displays the table as form.
As Datasheet	Displays the table as datasheet.

Help menu

Use commands of the *Help menu* to access the Help and get information about the copyright. The *Help menu* contains the following commands:

Commands	Description
Help Contents	Opens Help topic contents.
About	Displays the copyright and version number for <i>Measurements Database</i> .

Toolbar

The **Toolbar** is a row of buttons at the top of the [Main window](#) which represent application commands. Clicking one of the buttons is a quick alternative way to choose a command from the [menu](#). Buttons on the toolbar are activated and deactivated according to the state of the application.



To find out more about the functionality of any toolbar button, click this button on the figure above.

The **Toolbar** has short Help Hints. Help Hint is the pop-up text that appears when the mouse pointer passes over a toolbar button.

Button "View Table as Form"

This button views the table as form.

Button "View Table as Datasheet"

This button views the table as datasheet.

Button "Raw Data form"

This button opens [Raw Data form](#)

Button "Send files to FFSDP"

This button sends selected files in the *Files panel* to the FFS Data Processor.

Button "Send Files Group to FFSDP"

This button sends all files of the current Files group to the FFS Data Processor.

Button "Ascending Sort"

This button sorts records of the table in ascending order by the selected field.

Button "Descending Sort"

This button sorts records of the table in descending order by the selected field.

Button "Help"

This button opens Help topic contents.

Button "Quick Search"

This button displays a search box for the selected field. If you want to find quickly the necessary

record you should type the first few characters and press **Enter**. In this case the application will automatically select for you the first record that contains these characters at the beginning. For Numeric, Logical and Data/Time fields you should type the whole field value. To close the search box press key **Esc**.

Button "Filter"

This button opens Filter dialog box that allows creating the filter that can be applied to the selected table. If this filter is applied, the only table records that correspond to the filter criteria will be displayed.

Database Navigator

Such operations as moving from one record to another, deleting records and editing information are supported by the Database Navigator.



To find out more about the functionality of any Navigator button, click this button on the figure above.

Navigator button "First"

This button moves cursor to the first record.

Navigator button "Previous"

This button moves cursor to the previous record.

Navigator button "Next"

This button moves cursor to the next record.

Navigator button "Last"

This button moves cursor to the last record.

Navigator button "Insert"

This button inserts new empty record.

Navigator button "Delete"

This button deletes the current record.

Navigator button "Edit"

This button switches the state of the table in edit mode. After updating information it is possible to save changes by pressing *Post button* or cancel changes by pressing *Cancel button*.

Navigator button "Post"

This button saves the current record.

Navigator button "Cancel"

This button cancels changes.

Navigator button "Refresh"

This button refreshes the information in the table. Valuable in multiuser application when several users work with the Database simultaneously.

Files Group panel

[Local menu](#)

Files Group panel represents information stored in the [DataSets table](#).

An example view of the *Files Group panel* is given below:

Name of the DataSet, information about the Guest (person, who requests the measurements) and sample, date of measurements, as well as short description of the measurement, are displayed in this panel. It is possible to perform all manipulation with *DataSets* table with the help of [Database Navigator](#) which is placed in the bottom part of the *Files Group panel*. In this part you can see number of current record, number of all records and current state of the table. [Button Copy](#) allows you to copy all fields from the previous record with the related parameters.

It is not necessary to type the name of Guest or name of sample each time when you create a new group of files. It is possible to choose it from the drop-down list. To add new Guest one should press [arrow button](#) in right part of *Guest combo box*. This button is enabled only in Edit or Insert mode. New information for the sample can be entered in the same way.

DataSets table can be viewed as a form view or datasheet view.

All actions under DataSets table are collected in the [local menu](#).

Button "Copy"

This button copies all fields from the previous record to the current record as well as all related parameters from the Parameters and ExtParameters tables. It is enabled in Edit mode.

Button "Insert new Guest"

This button opens Guests Form to add new Guest. Name of the Guest will be pasted in *Guest combobox* after closing the form by pressing *Insert button*. It is enabled in Edit mode.

Button "Insert new Sample"

This button opens *Samples form* to add new Sample. Name of the Sample will be pasted in *Sample combobox* after closing the form by pressing *Insert button*. It is enabled in Edit mode.

Local menu of the Files Group panel

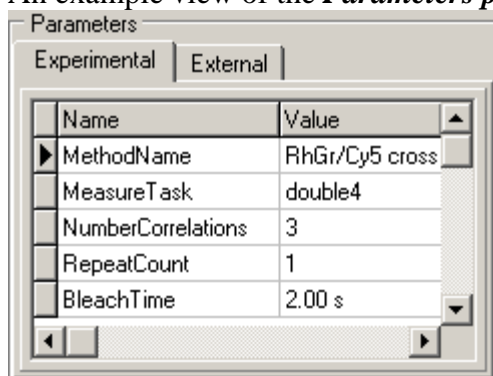
Items	Description
Insert	Inserts a new empty record in the table.
Delete	Deletes current record.
Edit	Switches state of the table in edit mode.
Post	Saves current record in the Database.
Cancel	Cancels changes.
Refresh	Refreshes the information in the table. Valuable in multi-user application when several users work with the Database simultaneously.
Previous	Copies all fields from previous record to current record.

copy	
Add new Guest	Opens Guests Form to add new Guest. Name of the Guest will be pasted in Guest Lookup after closing the form by pressing Insert Button.
Add new Sample	Opens Samples Form to add new Sample. Name of the Sample will be pasted in Sample Lookup after closing the form by pressing Insert Button.
Calc. Weight (repeat)	Calculates Weight Factors for repeated independent measurements with equal conditions (for all files related to the selected Files Group and viewed in the Files grid) as standard deviations of each point of characteristics. To select only needed files use the Filter. Number of selected files should be at least 6. Weight factors will be the same for all files.
Clear Weight	Clears Weight Factors for all files related to the selected Files Group and viewed in the Files grid. To select only needed files use the Filter.
Sort	Sorts the table.
Find Record	Allows to set the filter on the table and to search the information by typing the first few characters.
Send Files Group to FFSDP	Sends all files from the Files Group to the FFS Data Processor.
Generate Report	Generates the report based on the selected record.
View	Allows to change the view of the table.

Parameters panel

This panel represents all parameters of the current DataSet (displayed in [Files Group panel](#)).

An example view of the *Parameters panel* is given below:



Parameters panel consist of the following pages:

[Experimental parameters page](#)

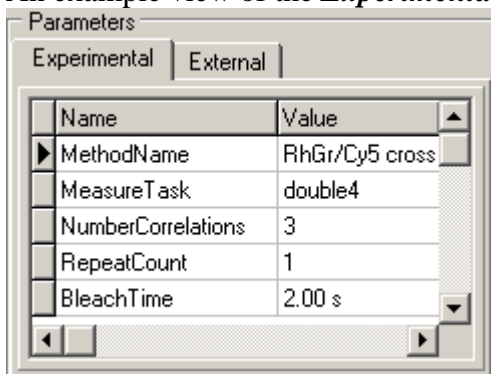
[External parameters page](#)

Experimental parameters page

[Local menu](#)

This page displays experimental parameters (parameters of equipment, etc.) of the current DataSet. The parameters are stored in the [Parameters table](#).

An example view of the *Experimental parameters page* is given bellow:



All actions under Experimental parameters table are collected in the [local menu](#).

Local menu of the Experimental parameters page

Items	Description
Insert	Inserts a new empty record in the table.
Delete	Deletes current record.
Edit	Switches state of the table in edit mode.
Post	Saves current record in the Database.
Cancel	Cancel changes.
Refresh	Refreshes the information in the table. Valuable in multi-user application when several users work with the Database simultaneously.
Sort	Sorts the table.
Find Record	Allows to set the filter on the table and to search the information by typing the first few characters.
Sort by Parameter	Sorts the DataSets table on the selected Parameter.

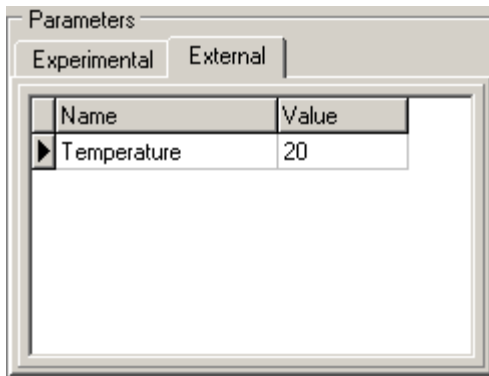
External parameters page

[Local menu](#)

This page displays external parameters of the current DataSet. The external parameters are stored in the [External parameters table](#).

External Parameters are used for storing such parameters as Temperature, Concentration and so on. Additional reason for using External Parameters is the possibility of visualization of the fit parameters as a function of a particular External parameter (for example, measurements were done at Temperature = 10C, 20C, 30C, ...).

An example view of the *External parameters page* is given bellow:



Field Name is the lookup field. It lookups the information from the [PNames table](#). All actions under External parameters table are collected in the [local menu](#).

Local menu of the External parameters page

Items	Description
Insert	Inserts a new empty record in the table.
Delete	Deletes current record.
Edit	Switches state of the table in edit mode.
Post	Saves current record in the Database.
Cancel	Cancels changes.
Refresh	Refreshes the information in the table. Valuable in multi-user application when several users work with the Database simultaneously.
Sort	Sorts the table.
Find Record	Allows to set the filter on the table and to search the information by typing the first few characters.
Add to Pick List	Allows to add new name of the parameter. Opens Parameters form .

Sort by Parameter Menu

Sorts the DataSets table (displayed in [Files Group panel](#)) on the selected Parameter

Items	Description
Ascending	Sorts records in DataSets table in ascending order by the selected Parameter.
Descending	Sorts records in DataSets table in descending order by the selected Parameter.

Files Panel

[Local menu](#)

Files panel represents all information about the measured data ([Observat table](#)) which are related to the current record in DataSets table (displayed in [Files Group panel](#)).

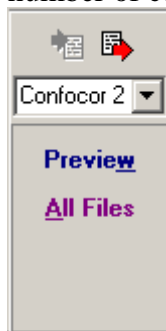
An example view of the **Files panel** is given below:

File Name	NRepeat	Type	Number Channels	Duration	StartTime
cross4.001	1	Intensity blue	292	30	14:51:01
cross4.001	1	Histogram blue	287	30	14:51:01
cross4.001	1	Photon delay blue	4	30	14:51:01
cross4.001	1	Autocorrelation red	176	30	14:51:01
cross4.001	1	Autocorrelation blue	176	30	14:51:01

Record: 7 from: 8 State: Browse

Each record in the *Observat table* describes particular measurement and contains such experimental parameters as Sample Position, Start Time, Duration, etc, as well as array of the measured data. Several records from the table *Observat* are related to one record in the table [DataSets](#) (relationship "many-to-one"). This relationship reflects the experimental configuration when measurements of the same sample under the same external conditions are being performed in series. In this case, certain number of particular measurements should be collected into one global group corresponding to the investigated object.

It is possible to perform all manipulation with *Observat* table with help of [Database Navigator](#) which is placed in the right part of the *Files panel*. In the bottom part of this panel you can see number of current record, number of all records and current state of the table.



These buttons allow to import data from FFS and raw data files, export them to ASCII file, perform a preview of the data and see all files together without separating to series related to particular record in the *DataSets* table. To find out more about the functionality of any button, click this button on the figure on the left.

Observation table in *Files* panel can be viewed only in datasheet view.

All actions under *Observat* table are collected in the [local menu](#).

Button "Import File"

This button opens the (depended of the import type) to import data from the FFS file (contains already calculated statistical characteristics) or from raw data file (binary file contains photon arrival time or time lags). It is necessary to choose the type of data from the "Import Type" combobox before importing. Date of measurement, description of the sample and all equipment parameters are imported automatically.

Button "Export File"

This button exports measured data to ASCII file. Opens the standard Save file dialog box to select the file.

Combobox "Import Type"

This combobox allows to choose the import type.

Button "Preview"

This button opens [Preview Window](#) for two-dimensional preview of measured or calculated from raw data statistical characteristic as well as standard deviations and relative standard deviations of each point of the statistical characteristic. The standard deviations (and relative standard deviations) can be viewed if they were calculated and stored (the field *IsWeight* in the [Observat table](#) indicates it).

Button "All Files"

This button opens [Files Form](#). In this form all files are displayed together without separating them to series related to particular record in [DataSets table](#). It allows to find needed files more quickly.

Local menu of the Files panel

Items	Description
Import FFS File	Opens the (depended of the import type) to import data from the FFS file or from raw data file. It is necessary to choose the type of data from the "Import Type" combobox on the Files panel . Date of measurement, description of the sample and all equipment parameters are imported automatically.
Delete	Deletes the selected record(s).
Edit	Switches state of the table in edit mode.
Post	Saves current record to the Database.
Cancel	Cancels changes.
Refresh	Refreshes the information in the table. Valuable in multi-user application when several users work with the Database simultaneously.
Send Files to FFSDP	Sends selected file(s) in the Files panel to the FFS Data Processor.
Export Data	Exports measured data to the ASCII file.
Calc. Weight	Calculates Weight Factors assuming known statistics on the noise. It is enabled not for all types of characteristics because unknown noise statistics.
Clear Weight	Clears Weight Factors.
Sort	Sorts the table.
Find Record	Allows to set the filter on the table and to search the information by typing the first few characters.
Preview	Opens Preview Window for two-dimensional preview of measured or calculated from raw data statistical characteristic as well as standard deviations and relative standard deviations of each point of the statistical characteristic.

Guests form

[Local menu](#)

This form is used for working with [Guests table](#). It displays all information about person or organization who orders measurements.

An example view of the *Guests form* is given in the following figure:

Guests

ID 2

Guest V. Skakun

Organization BSU

Address 4 F. Skoryna Avenue, Minsk 220050, Belarus

Tel. 0375-17-2789-665

Fax 0375-17-2789-345

Record: 2 from: 2 State: Browse Select Close

To find out more about the functionality of any component, click this component in the figure. All actions under Guests table are collected in the [local menu](#)

Main panel

Represents all fields from [Guests table](#). It can be viewed as a form view or datasheet view.

Button "Select"

This button closes the form and selects the first record in [DataSets table](#) (represents in Files Group panel in Main window) which correspond to the current Guest in this form.

Button "Close"

This button closes the *Guests form*.

Button "Help"

This button opens the help window that describes how to work with the form.

Samples form

[Local menu](#)

This form is used for working with [Samples table](#). It displays all information about samples which were used in measurements.

An example view of the *Samples form* is given in the following figure:

Samples

ID 1

Sample Rhodamine GD

Description Rhodamine Green Dextran

Record: 1 from: 1 State: Browse Select Close

To find out more about the functionality of any component, click this component in the figure. All actions under Samples table are collected in the [local menu](#).

Main panel

Represents all fields from [Samples table](#). It can be viewed as a form view or datasheet view.

Button "Select"

This button closes the form and selects the first record in [DataSets table](#) (represents in Files Group panel in Main window) which correspond to the current Sample in this form.

Button "Close"

This button closes the *Samples form*.

Files form

Local menu

This form is used for working with all records of the [Observat table](#) without separating to series related to a particular record in the DataSets table.

An example view of the *Files form* is given in the following figure:

The screenshot shows a window titled "Observations" with a toolbar at the top containing icons for navigation and actions. The main area contains several input fields:

- ID: 3
- File Name: PINHOL30.002
- Type: Autocorrelation
- Group ID: 1
- Sample Position: E-6/H-12
- Kinetic Number: (empty)
- Repeat Number: 2
- Start Time: 12:10:03

A "Parameters" section on the right contains:

- Number Channels: 192
- Sample Position X: 46.409
- Sample Position Y: 37.397
- Duration: 29.7
- TimeStep: 2E-7
- Is Raw Data Derived: False
- Range: (empty)

At the bottom, it displays "Record: 3 from: 27 State: Browse" and two buttons: "Select" and "Close".

To find out more about the functionality of any component, click this component in the figure. All actions under Observat table are collected in the [local menu](#).

Main panel

Represents all fields from [Observat table](#). It can be viewed as a form view or datasheet view.

Button "Select"

This button closes the form and selects this file in *Files panel* in *Main window*.

Button "Close"

This button closes the *Observation files form*.

Current record.

Total number of records.

State of the table.

Raw Data form

[Local menu](#)

This form is used for working with [Raw Data table](#). Each record in the Raw Data table is linked to the correspondent record in the DataSets table (which is automatically created during the import of raw data file). One can link many raw data files to one record in the Raw Data table when necessary. Especially it is useful when these raw data files represents a series of repetitions of the measurement with the same conditions. It reduces the number of records in the table and allows calculating of statistical characteristics from each repetition just by clicking one button. An example view of the **Raw Data form** is given in the following figure:

To find out more about the functionality of any component, click this component in the figure. All actions under [Raw Data table](#) are collected in the [local menu](#).

The screenshot shows a software window titled "Raw Data". The window has a toolbar with various icons for navigation and data manipulation. The main area contains several input fields and a description box. The fields are: ID (3), File Name (FcsRaw), File Path (D:\Data\FCSData\Confocor2\FcsRaw.007), File Path Extension (empty), Files Count (1), Type (ConfoCor 2), Group ID (4), Date (21.04.2005), Red Channel Count (353347), Blue Channel Count (6802143), End Time (60), and Clock Time (5E-8). A description box is also present but empty. At the bottom, it shows "Record: 2 from: 2", "State: Browse", and buttons for "Select" and "Close".

Main panel

Represents all fields from [Raw Data table](#). It can be viewed as a form view or datasheet view.

Button "Select"

This button closes the form and selects the first record in [DataSets table](#) (represents in Files Group panel in Main window) which correspond to the current Raw Data record in this form.

Button "Close"

This button closes the **Raw Data form**.

Button "Bursts counting"

Opens RawDataBuilder.hlp>mainBursts counting window for counting of coincidence bursts as well as bursts in separate channels.

Button "Export Raw Data to the ASCII file"

This button exports raw data to ASCII file. Opens the standard Save file dialog box to select the file. Exports Red channel data to the first column, Blue channel data to the second one.

Button "Raw Data Builder"



Opens Raw data builder for the raw data processing.

Button "Raw Data Simulator"



Use to simulate the Raw Data time trace with constant intensity and given autocorrelation function (in form of pairwise stochastic point process).

Opens Raw Data Simulator form.

Forms menus

Sort Menu

Sorts the table.

Items	Description
Ascending	Sorts records of the table in ascending order by the selected field.
Descending	Sorts records of the table in descending order by the selected field.

Find Record Menu

Allows to set the filter on the table and to search the information by typing the first few characters.

Items	Description
Quick Search	Displays a search box for the corresponding field. If you want to find quickly the necessary record you should type the first few characters and press Enter. In this case the application will automatically select the first record that contains at the beginning the characters, which matched the typed ones. For the Numeric, Logical and Data/Time fields you should type the whole value for the correspondent field. To close the search box, press key Esc.
Filter	Opens Filter dialog box that allows creating the filter that can be applied to the selected table. If this filter is applied, the only table records that correspond to the filter criteria will be displayed.
Remove Filter	Removes the filter from the table.

View Menu

Allows to change the view of the table.

Items	Description
View As Form	Displays the table as Form.
View As Datasheet	Displays the table as Datasheet.

Local menu of the form (Guests, Samples, All files, Raw Data)

Items	Description
Insert	Inserts a new empty record in the table.
Delete	Deletes current record.
Edit	Switches state of the table in edit mode.

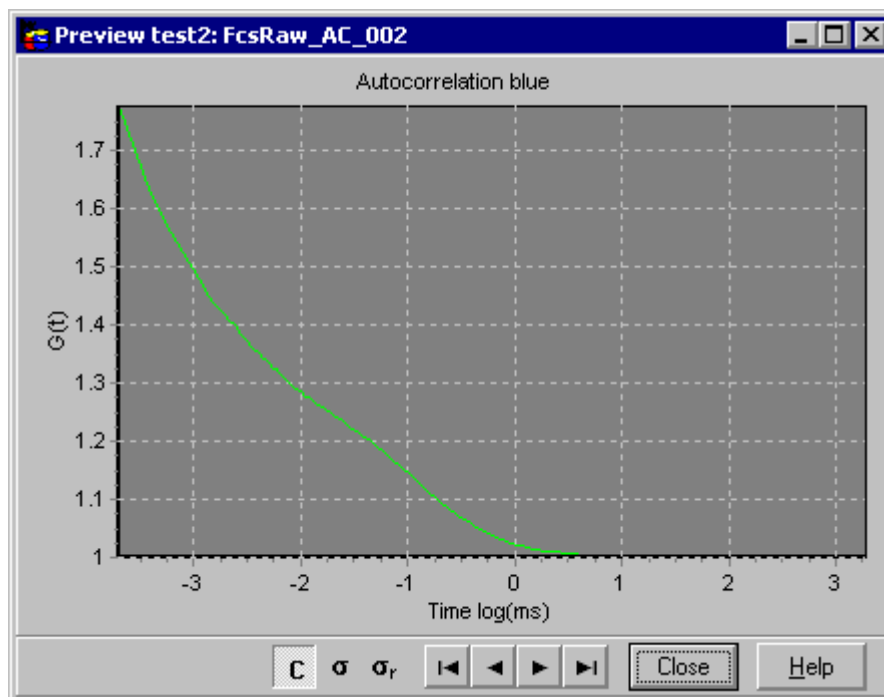
Post	Saves current record in the Database.
Cancel	Cancels changes.
Refresh	Refreshes the information in the table. Valuable in multi-user application when several users work with the Database simultaneously.
Sort	Sorts the table.
Find Record	Allows to set the filter on the table and to search the information by typing the first few characters.
View	Allows to change the view of the table.
Select	Selects related record in the main form.

Preview window

This window is used to display stored in the current record of the [Files panel](#) the measured (or calculated from raw data) statistical characteristic as well as standard deviations and relative standard deviations of each point of the statistical characteristic in two-dimensional space. Standard deviations (and relative standard deviations) can be viewed if they were calculated and stored (the field IsWeight in the [Observat table](#) indicates it).

Name of the file, name of the Files Group and type of stored data are displayed in the title of this window.

An example view of the **Preview window** is given below:



To find out more about the functionality of any component, click this component in the figure. Use local menu of 2D Chart for customizing the chart, export chart data to text and BMP files, save, apply and reset user defined settings.

Use [Navigator](#) in the bottom part of this window to display characteristics of other files of current group.

2D Chart

This Chart displays stored in the current record of the [Files panel](#) the measured or calculated from raw data statistical characteristic as well as standard deviations and relative standard

deviations of each point of the statistical characteristic in two-dimensional space. Dimensions of X and Y axis depends from the type of the characteristic.

Button "Help"

Opens the help window that describes how to work with **Preview window**.

Button "Close"

This button closes this window.

Navigator



This Navigator allows to scan measured data from the files belonging to the current Files Group.

Button "Characteristic"

Switches on/off the preview of the stored statistical characteristic.

Button "Standard deviations"

Switches on/off the preview of the stored standard deviations of each point of the statistical characteristic.

This button is unavaible if standard deviations have not been calculated. To calculate them check Weight cacl. check box (it allows to calculate standard deviations of each point of the characteristic from the raw data) or use Calc. Weight local menu command of the DataSet panel of the main window (it allows to calculate standard deviations of each point of the characteristic from the set of characteristics measured (or calculated from the raw data) under the same conditions).

Button "Relative standard deviations"

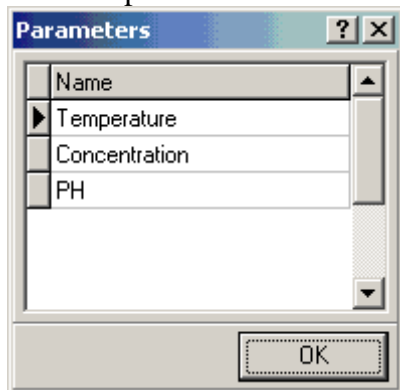
Switches on/off the preview of the relative standard deviations of each point of the statistical characteristic.

Parameters form

[Local menu](#)

This form is used for working with [PNames table](#). It displays the names of the external parameters.

An example view of the *Parameters form* is given in the following figure:



All actions under [PNames table](#) are collected in the [local menu](#).

Button "OK "

Closes the form.

Parameters grid

Displays the name of the external parameter ([PNames table](#)).

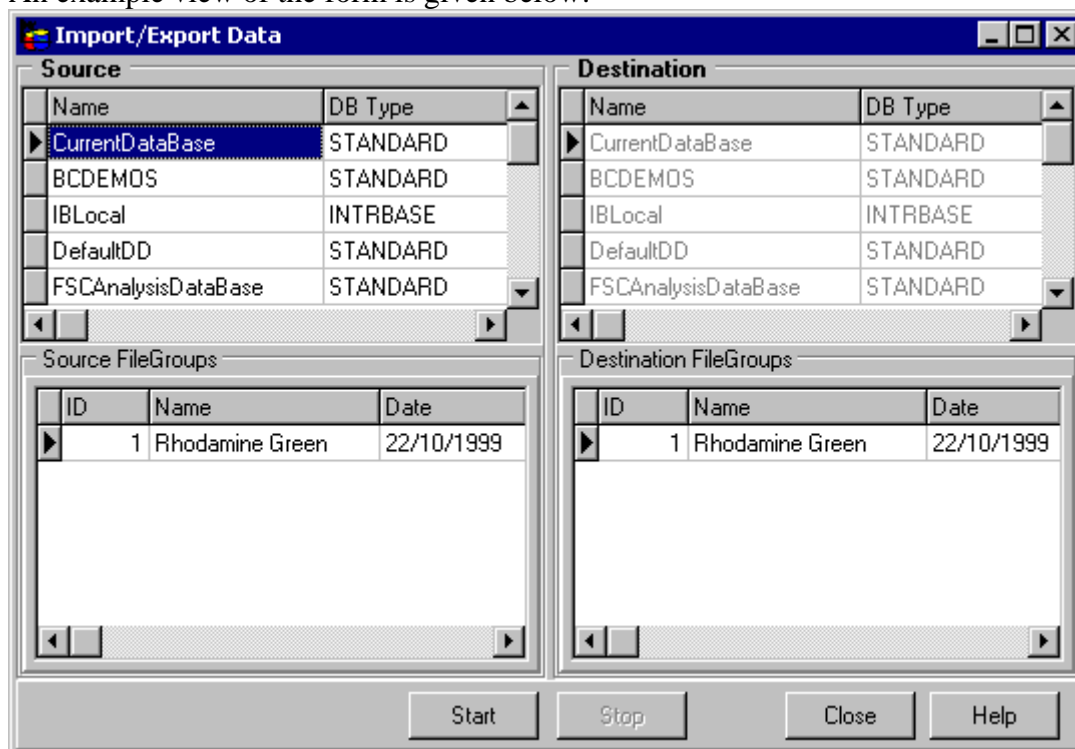
Local menu of the Parameters form

Items	Description
Insert	Inserts a new empty record in the table.
Delete	Deletes current record.
Edit	Switches state of the table in edit mode.
Post	Saves current record in the Database.
Cancel	Cancel changes.
Refresh	Refreshes the information in the table. Valuable in multi-user application when several users work with the Database simultaneously.
Sort	Sorts the table.
Find Record	Allows to set the filter on the table and to search the information by typing the first few characters.

Import/Export Data form

Use this form to copy the Files Group(s) with all supplementary information (files, parameters, linked raw data, etc.) from one database to another.

An example view of the form is given below:



To find out more about the functionality of any component, click this component in the figure.

Button "Start"

This button starts the import procedure.

Button "Stop"

This button stops the import procedure.

Button "Close"

Closes the dialog box without performing the action.

Button "Help"

This button opens the help window that describes how to work with *Import/Export Data form*.

Source Databases

This table is used to select the source database.

Destination Databases

This table is used to select the destination database.

Source FileGroups table

This table is used to select source Files Group(s). It is possible to select many File Groups.

Destination FileGroups table

This table represents FileGroups, stored in the Destination database.

Local menu of the Source FileGroups table

Items	Description
Refresh	Refreshes the information in the table. Valuable in multi-user application when several users work with the Database simultaneously.
Sort	Sorts the table.
Find Record	Allows to set the filter on the table and to search the information by typing the first few characters.
Select all	Selects all records in the source FileGroups table.

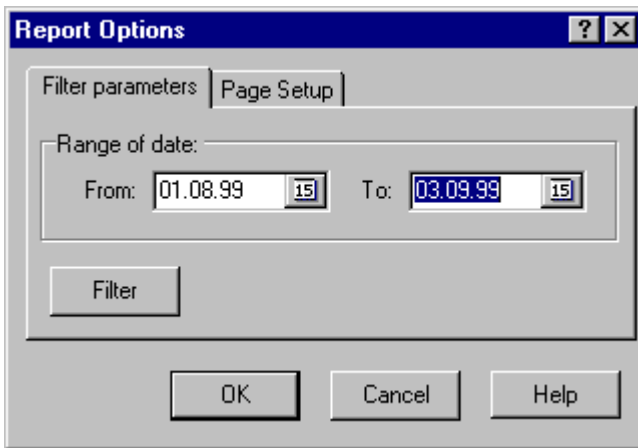
Local menu of the Destination FileGroups table

Items	Description
Refresh	Refreshes the information in the table. Valuable in multi-user application when several users work with the Database simultaneously.
Sort	Sorts the table.
Find Record	Allows to set the filter on the table and to search the information by typing the first few characters.

Report Options dialog box

This dialog box is used for customizing the Report and selecting records which will be included into the Report. You can specify Page Setup settings to adjust the printed area.

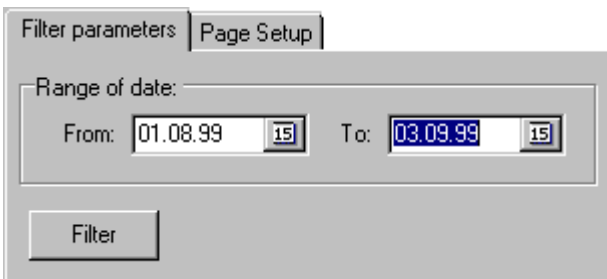
An example view of the dialog box is given below:



To find out more about the functionality of any component, click this component in the figure.

"Filter parameters" page

This page is used for selecting records which will be included into the Report. An example view of the *Filter parameters page* is given below:



To find out more about the functionality of any component, click this component in the figure.

Range of date panel

This panel allows to specify the range of dates. You can use built-in calendar by clicking on the small button in right part of Editor.

Button "Ok"

This button closes the dialog box and starts creating the report.

Button "Cancel"

This button closes the dialog box without creating the report.

Button "Filter"

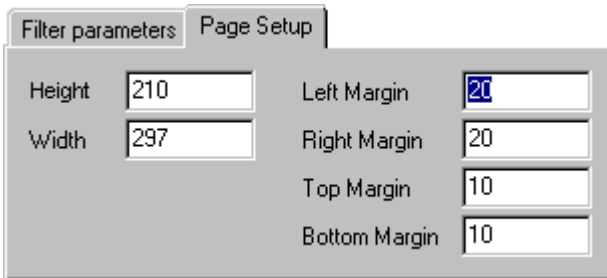
This button opens Filter dialog box that allows creating the filter that can be applied to the selected table. If this filter is applied, the only table records that correspond to the filter criteria are displayed.

Button "Help"

This button opens the help window that describes how to work with *Reports Options dialog box*.

"Page Setup" page

This page is used for setting paper size and paper margins for the report. An example view of the *"Page Setup" page* is given below:



To find out more about the functionality of any component, click this component in the figure.

Enter **Height** of your paper here.

Enter **Width** of your paper here.

Left Margin Enter the distance you want between the left edge of the page and the left edge of unindented lines.

Right Margin Enter the distance you want between the right edge of the page and the right end of the line with no right indent.

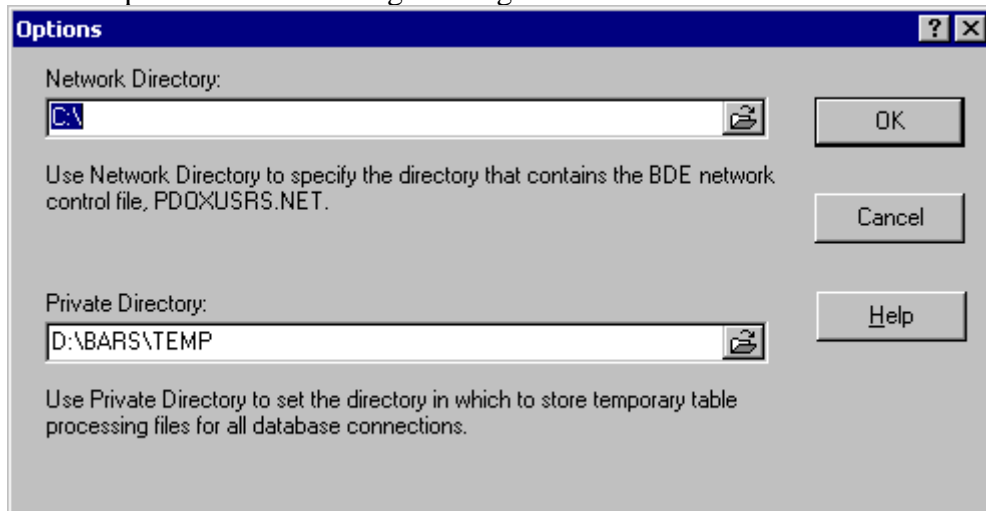
Top Margin Enter the distance you want between the top of the page and the top of the first line of the page.

Bottom Margin Enter the distance you want between the bottom of the page and the bottom of the last line of the page.

Options dialog box

Use this dialog box to set internal variables of Borland Database Engine.

An example view of the dialog box is given below:



To find out more about the functionality of any component, click this component in the figure.

Network Directory edit

Use Network Directory to specify the directory that contains the BDE network control file, PDOXUSRS.NET.

This file governs the sharing of Paradox tables on network drives. All applications that share Paradox tables on a network directory must specify the same value for this property, and must have read, write, and create rights for the directory.

Private Directory edit

Use Private Directory to set the directory in which to store temporary table processing files for all database connections.

For applications that run directly from a networked file server, the application should set

PrivateDir to a user's local drive to improve performance and to prevent temporary files from being created on the server where they might conflict with temporary files created by other instances of the application.

Button "Ok"

Closes the dialog box and set variables.

Button "Cancel"

Closes the dialog box without setting variables.

Button "Help"

This button opens the help window that describes how to work with **Options dialog box**.

Button "Browse"

Opens standard Browse Directory dialog box.

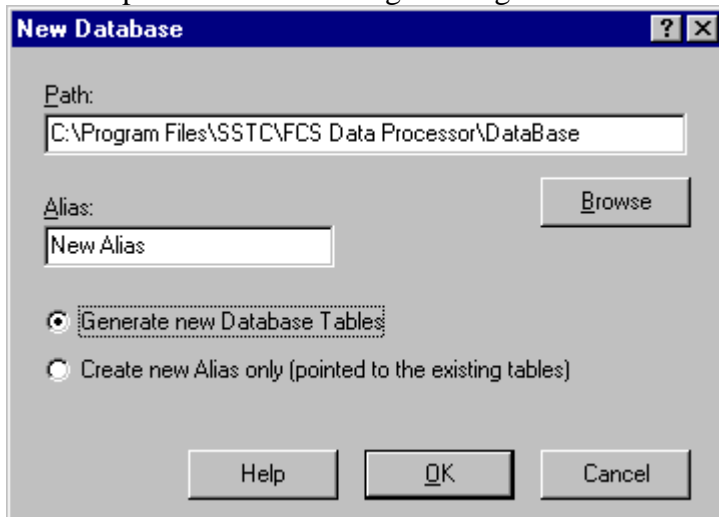
New Database dialog box

Use this dialog box to create a new empty Database (set of tables) allowing to keep different data in different folders or even computers within the local network and easily switch between Databases at run time. You must specify the [Alias](#) for this Database in *Alias edit*.

An alias is a name and a set of parameters that describe a database resource. BDE applications use aliases to connect with databases.

If you want to use remote (writing local network) access to the Database you must set the Network Directory (Tools/Options... main menu item).

An example view of the dialog box is given below:



To find out more about the functionality of any component, click this component in the figure.

Path edit

Displays selected Directory.

Button "Browse"

Opens standard Browse Directory dialog box.

Alias edit

Is used to input new [alias](#).

Button "Ok"

Closes the dialog box and performs the action.

Button "Cancel"

Closes the dialog box without performing the action.

Button "Help"

This button opens the help window that describes how to work with *New Tables dialog box*.

Generate new Database Tables radio button

If this radio button is checked, new empty database tables will be created in the specified path. The alias that is pointed to the Database will be created as well.

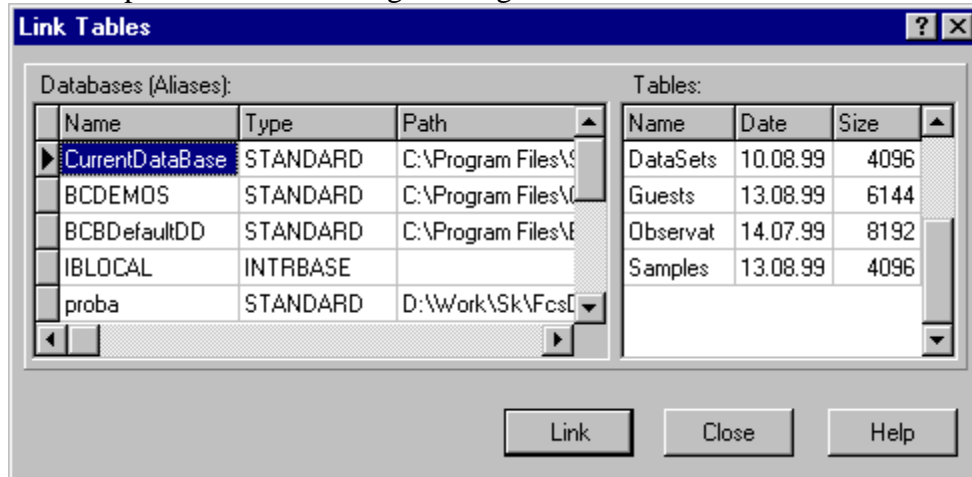
Create new Alias only radio button

If this radio button is checked, only alias that is pointed to the database tables located in the specified path will be created. New empty database tables will not be created.

Link Tables dialog box

Use this dialog box to switch between Databases at run time.

An example view of the dialog box is given below:



To find out more about the functionality of any component, click this component in the figure.

Button "Link"

Closes the dialog box and performs the link with the selected tables.

Button "Help"

This button opens the help window that describes how to work with *Link tables dialog box*.

Databases (Aliases) panel

Represents [alias](#), type and path of all registered databases at the local machine.

Tables panel

Represents name, date and size of the tables of the database.

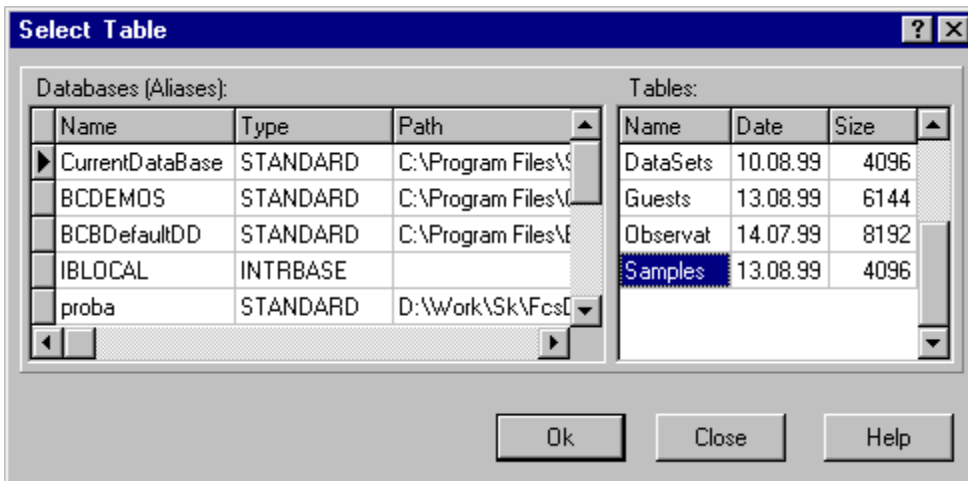
Button "Close"

Closes the dialog box without performing the action.

Select Table dialog box

Use this dialog box to select the table.

An example view of the dialog box is given below:



To find out more about the functionality of any component, click this component in the figure.

Button "Ok"

Closes the dialog box and performs the action.

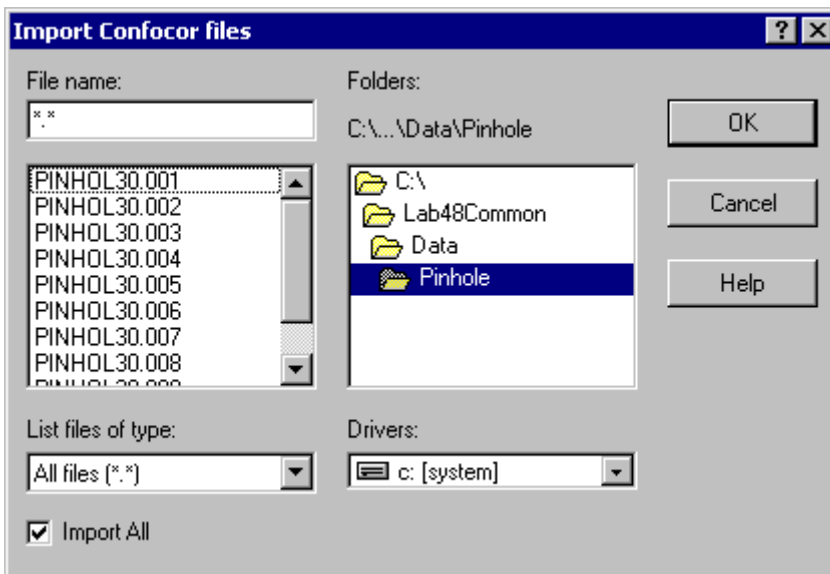
Button "Help"

This button opens the help window that describes how to work with *Select table dialog box*.

Import Confocor files dialog box

Use this dialog box to import data from the FFS file to the Measurements Database.

An example view of the dialog box is given below:



To find out more about the functionality of any component, click this component in the figure.

Import Confocor 2 files dialog box

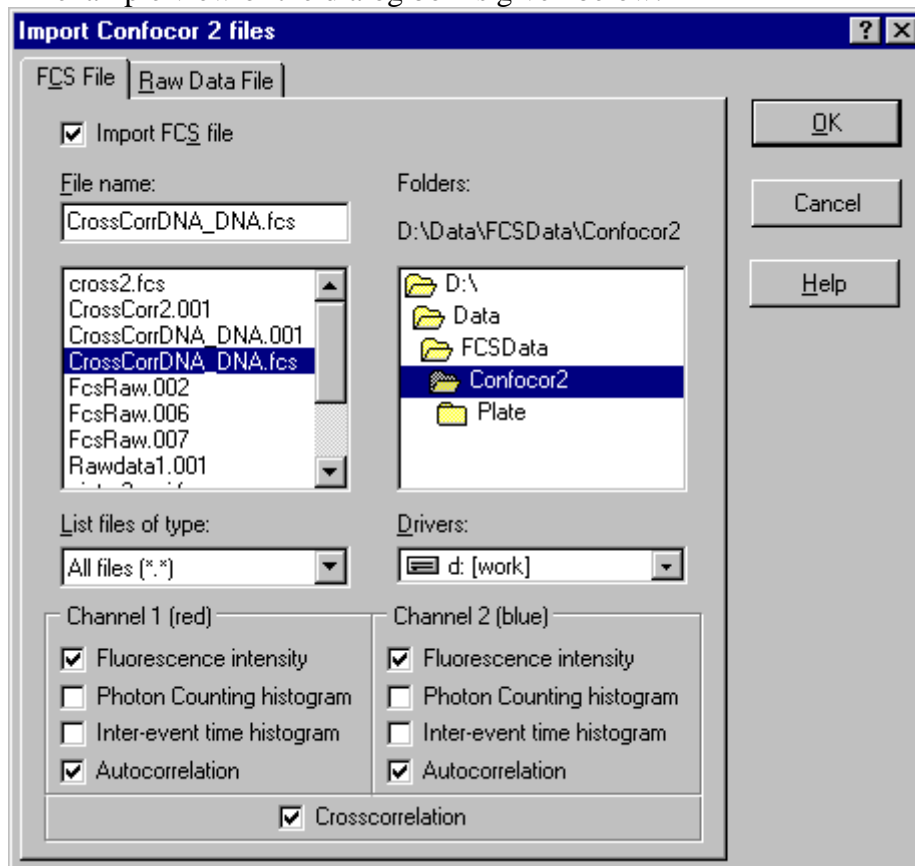
FFS data page

Use [FFS file page](#) of this dialog box to import data from the [FFS file](#) to the Measurements Database. The correspondent [raw data](#) can be also imported through [Raw data file page](#) of this dialog box (actually a link to the file is stored). One can link many raw data files to one record in the [Raw Data table](#) when necessary. Especially it is useful when these raw data files represents a series of repetitions of the measurement with the same conditions. It reduces the number of stored records and allows calculating of statistical characteristics in Raw Data Builder from each

repetition just by clicking one button.

Uncheck the Import FFS file check box if you want to import raw data file only.

An example view of the dialog box is given below:



To find out more about the functionality of any component, click this component in the figure.

Button "Ok"

This button closes the dialog box and starts importing the file to the Measurements Database.

Button "Cancel"

This button closes the dialog box without importing the file to the Measurements Database.

Button "Help"

This button opens the help window that describes how to work with the dialog box.

"File name" edit

This edit provides a space for you to type the name of the file you want to import to the Measurements Database.

"Import FFS File" checkbox

If this checkbox is checked, the FFS file will be imported to the Measurements Database.

"File name" list

This list shows files in the selected folder. To quickly select a file, click the file name in the list.

"List files of type" combobox

This combobox allows selecting the type of files to display.

"Folders" box

This box shows the drive and folder you have selected.

"Drivers" combobox

Use this combobox to select a drive from the Drive drop-down list.

"Import All" checkbox

If this checkbox is checked, all files with the same name (extension may be different) will be

imported to the Measurements Database.

"Cross-correlation" checkbox

If this checkbox is checked, cross-correlation function will be imported to the Measurements Database.

"Fluorescence intensity" checkbox

If this checkbox is checked, fluorescence intensity for channel 1 (red) will be imported to the Measurements Database.

"Fluorescence intensity" checkbox

If this checkbox is checked, fluorescence intensity for channel 2 (blue) will be imported to the Measurements Database.

"Photon counting histogram" checkbox

If this checkbox is checked, photon counting histogram for channel 1 (red) will be imported to the Measurements Database.

"Photon counting histogram" checkbox

If this checkbox is checked, photon counting histogram for channel 2 (blue) will be imported to the Measurements Database.

"Inter-event time histogram" checkbox

If this checkbox is checked, inter-event time histogram for channel 1 (red) will be imported to the Measurements Database.

"Inter-event time histogram" checkbox

If this checkbox is checked, inter-event time histogram for channel 2 (blue) will be imported to the Measurements Database.

"Autocorrelation" checkbox

If this checkbox is checked, autocorrelation function for channel 1 (red) will be imported to the Measurements Database.

"Autocorrelation" checkbox

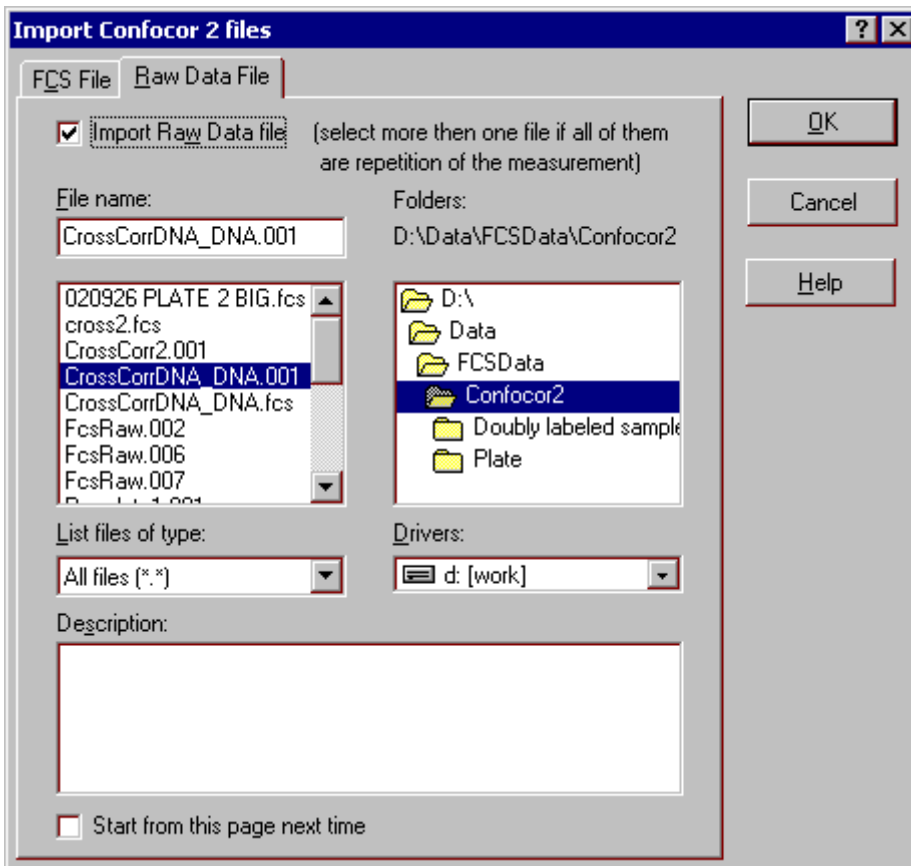
If this checkbox is checked, autocorrelation function for channel 2 (blue) will be imported to the Measurements Database.

Description

Allows to describe the imported raw data file.

[Raw data page](#)

An example view of the dialog box is given below:



To find out more about the functionality of any component, click this component in the figure.

"Start from this page next time" checkbox

If this checkbox is checked, next time the **Raw Data File** page will be shown at the beginning.

"Import Raw Data File" checkbox

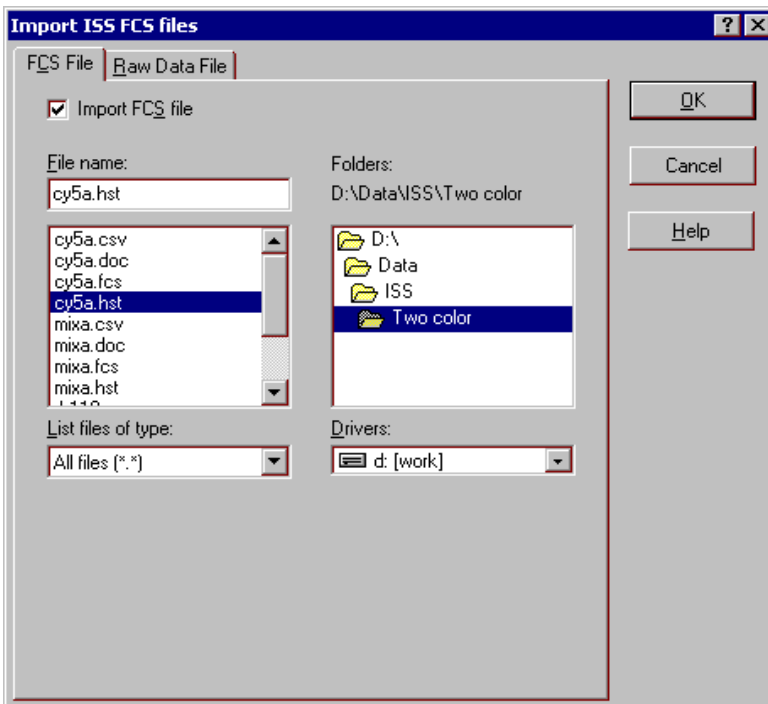
If this checkbox is checked, the raw data file will be imported to the Measurements Database.

Import ISS ALBA files dialog box FFS data page

Use [FFS file page](#) of this dialog box to import data from the [FFS file](#) (has the extension csv) to the Measurements Database. The correspondent [raw data](#) (has the extension FFS) can be also imported through [Raw data file page](#) of this dialog box (actually a link to the file is stored). One can link many raw data files to one record in the [Raw Data table](#) when necessary. Especially it is useful when these raw data files represents a series of repetitions of the measurement with the same conditions. It reduces the number of stored records and allows calculating of statistical characteristics in Data Builder from each repetition just by clicking one button.

Uncheck the Import FFS file check box if you want to import raw data file only.

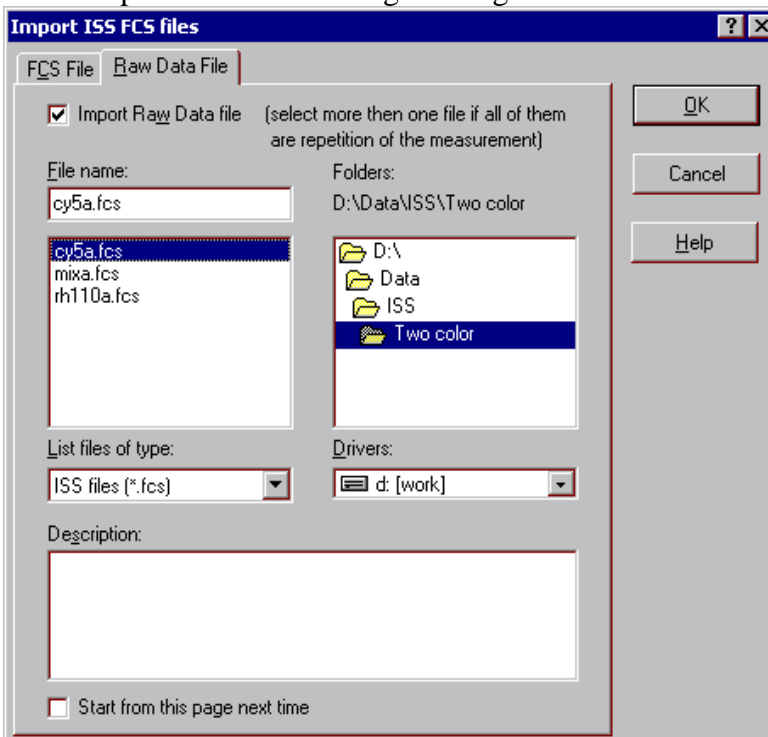
An example view of the dialog box is given below:



To find out more about the functionality of any component, click this component in the figure.

Raw data page

An example view of the dialog box is given below:



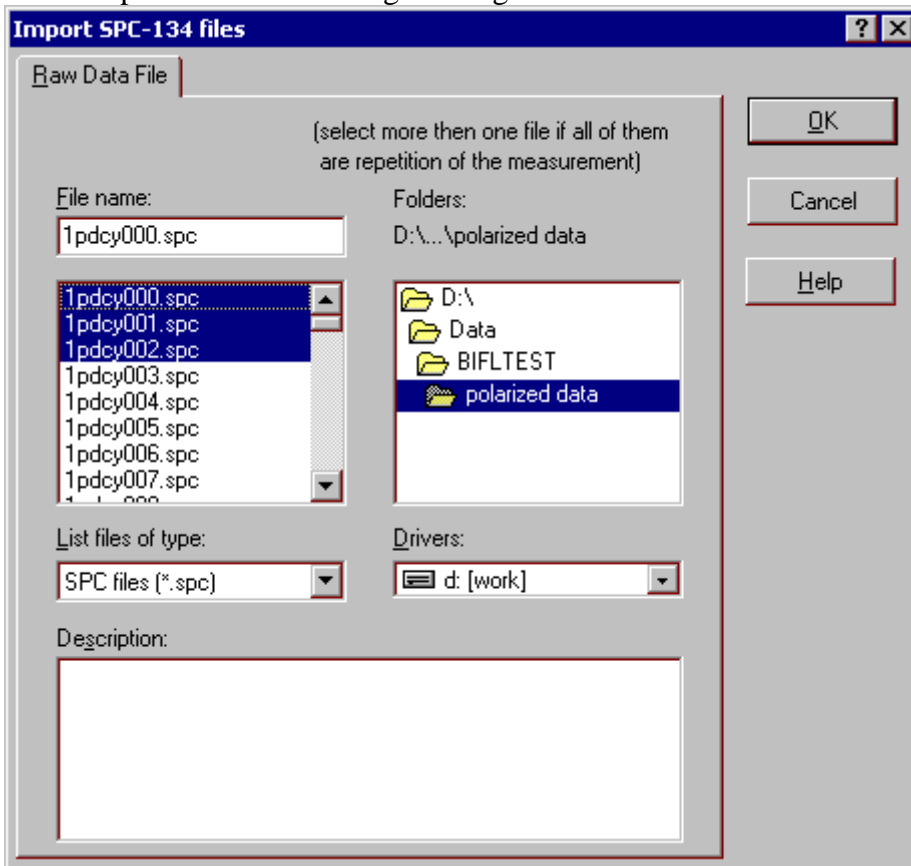
To find out more about the functionality of any component, click this component in the figure.

Import SPC files dialog box

Use the dialog box to import [raw data](#) to the Measurements Database (actually a link to the file is stored). If the raw data represented by a series of files (differ by only its number) select all of them. They will be processed as single one. One can link many raw data to one record in the [Raw Data table](#) when necessary. Especially it is useful when these raw data files represents a series of repetitions of the measurement with the same conditions. It reduces the number of

stored records and allows calculating of statistical characteristics in Data Builder from each repetition just by clicking one button.

An example view of the dialog box is given below:



To find out more about the functionality of any component, click this component in the figure.

Observat table

Is used to store information about the measurements (usually imported from FFS files. Several records from the Observat table are related to one record in the [DataSets table](#) (relationship "many-to-one").

It is used also for storing the statistical characteristics derived from the raw data.

Field name	Type	Description
ObservationID	Autoincrement	Identifies of the record
FileName	String	Name of the file
DataSetID	Numeric	Identifier of the record in DataSets table . Needs the relation to the DataSets table to be established.
Type	String	Type of data
NumChannels	Numeric	Number of Channels
SamplePos	String	Position of the sample (parameter of equipment)
KineticNumber	Numeric	Kinetic number
RepeatNumber	Numeric	Repeat number
SamplePosX	Numeric	X position of sample (parameter of equipment)
SamplePosY	Numeric	Y position of sample (parameter of equipment)

Duration	Numeric	Duration (parameter of equipment)
TimeStep	Time	Time step. It is calculated from the imported data in case of measured data.
Range	String	Left and right positions of raw data markers (only for raw data derived statistical characteristics)
StartTime	Time	Start Time (parameter of equipment)
IsRawDataDerived	Logical	Defines the source of data. It is true when statistical characteristics were calculated from the raw data
IsWeight	Logical	Defines the existence of the weight. It is true if the weight factors were calculated
CorrData	Memo	Contains measured or calculated data
Weight	Memo	Contains weight data

Notes

- ⚡ Field *ObservationID* is read only.
- ⚡ This table can be sorted by any field (except CorrData and Weight). To perform the sorting by the given field, select this field and press [Ascending/Descending Sort button](#) in the [Toolbar](#) or choose [Ascending/Descending menu items](#) in the local menu.
- ⚡ Use [Quick Search button](#) in the Toolbar or choose [Quick Search menu items](#) in local menu for quick searching the information in the selected field.

DataSets table

Is used to store information related to one group of files. Several records from the DataSets table are related to one record in the [Guests table](#) and to one record in [Samples table](#) (relationship "many-to-one").

Field name	Type	Description
DataSetID	Autoincrement	Identifies of the record.
Name	String	Name of the files group
GuestID	Numeric	Identifier of the records in Guests table . Needs the relation to the Guests table to be established.
SampleID	Numeric	Identifier of the records in Sample table . Needs the relation to the Sample table to be established.
ObservDate	Date/Time	Date of measurements
Description	Memo	Description of the file group

Notes

- ⚡ Field *DataSetID* is read only.
- ⚡ This table can be sorted by any field (except *Description*). To perform the sorting by the given field, select this field and press [Ascending/Descending Sort button](#) in the [Toolbar](#) or choose [Ascending/Descending menu items](#) in the local menu.
- ⚡ Use [Quick Search button](#) in the Toolbar or choose [Quick Search menu items](#) in local menu for quick searching the information in the selected field.

Guests table

Contains information about person or organization who orders measurements.

Field name	Type	Description
GuestID	Autoincrement	Identifies of the record
Guest	String	Name of the person or organization who orders measurements
Address	String	Address
Organization	String	Organization
Tel	String	Telephone
Fax	String	Fax

Notes

- ✎ Field *GuestID* is read only.
- ✎ This table can be sorted by any field. To perform the sorting by the given field, select this field and press [Ascending/Descending Sort button](#) in the [Toolbar](#) or choose [Ascending/Descending menu items](#) in the local menu
- ✎ Use [Quick Search button](#) in the [Toolbar](#) or choose [Quick Search menu items](#) in local menu for quick searching the information in the selected field.

Samples table

Contains the detailed information regarding the explored sample.

Field name	Type	Description
SampleID	Autoincrement	Identifies of the record
Sample	String	Name of the sample
Description	Memo	Description of the sample

Notes

- ✎ Field *SampleID* is read only.
- ✎ This table can be sorted by any field (except *Description*). To perform the sorting by the given field, select this field and press [Ascending/Descending Sort button](#) in the [Toolbar](#) or choose [Ascending/Descending menu items](#) in the local menu.
- ✎ Use [Quick Search button](#) in the [Toolbar](#) or choose [Quick Search menu items](#) in local menu for quick searching the information in the selected field.

Parameters table

Is used to store the equipment parameters. Several records from the Parameters table are related to one record in the [DataSets table](#) (relationship "many-to-one").

Field name	Type	Description
ParameterID	Autoincrement	Identifies of the record
DataSetID	Numeric	Identifier of the record in DataSets table . Needs the relation to the DataSets table to be established
Name	String	Name of the parameter
Value	String	Value of the parameter

Notes

- ✎ Field *ParameterID* is read only.
- ✎ This table can be sorted by any field. To perform the sorting by the given field, select this field and press [Ascending/Descending Sort button](#) in the [Toolbar](#) or choose [Ascending/Descending menu items](#) in the local menu.

☞ Use [Quick Search button](#) in the Toolbar or choose [Quick Search menu items](#) in local menu for quick searching the information in the selected field.

External parameters table

Is used to store the external parameters. These parameters are used for displaying dependence of estimated parameters (Estimated parameter versus External parameter). Several records from the External parameters table are related to one record in the [DataSets table](#) (relationship "many-to-one"). While entering the parameter it is necessary to add the parameter name to the [PNames table](#).

Field name	Type	Description
ParameterID	Autoincrement	Identifies of the record
DataSetID	Numeric	Identifier of the record in DataSets table . Needs the relation to the DataSets table to be established
Name	String	Name of the parameter
Value	String	Value of the parameter

Notes

- ☞ Field *ParameterID* is read only.
- ☞ Field Name is the lookup field. It lookups the information from the [PNames table](#).
- ☞ This table can be sorted by any field. To perform the sorting by the given field, select this field and press [Ascending/Descending Sort button](#) in the [Toolbar](#) or choose [Ascending/Descending menu items](#) in the local menu.
- ☞ Use [Quick Search button](#) in the Toolbar or choose [Quick Search menu items](#) in local menu for quick searching the information in the selected field.

PNames table

Is used to store the external parameter names. It is created in order to avoid mistakes while entering external parameter names. At the beginning it is necessary to add the parameter name to the PNames table then this parameters can be chosen from drop-down list in the External parameters page of the Parameters panel.

Field name	Type	Description
Name	String	Name of the parameter

Notes

- ☞ Field *ParameterID* is read only.
- ☞ This table can be sorted by any field. To perform the sorting by the given field, select this field and press [Ascending/Descending Sort button](#) in the [Toolbar](#) or choose [Ascending/Descending menu items](#) in the local menu.
- ☞ Use [Quick Search button](#) in the Toolbar or choose [Quick Search menu items](#) in local menu for quick searching the information in the selected field.

RawData table

Contains link to the raw data file(s) and some other information. Each record in the Raw Data file is linked to the correspondent record in the Data Sets table (that is automatically created during the import of raw data file). One can link many raw data files to one record in the Raw Data table when necessary. Especially it is useful when these raw data files represents a series of repetitions of the measurement with the same conditions. It reduces the number of records in the

table and allows calculating of statistical characteristics from each repetition just by clicking one button. The Files Count field represents the number of files linked to the current record.

Field name	Type	Description
ID	Autoincrement	Identifier of the record
File name	String	Name of the file
File path	String	Path to the first source file
File path extension	String	Path to the others source files. If a number of files are linked to the record, this field contains the path to all files except the first one
Type	String	Data format
Group ID	Numeric	Contains ID of the record in the DataSets table that is linked to current record.
Date	Date	Date of the record creation
Red Channel Count	Numeric	Events count in the red channel raw data time trace
Blue Channel Count	Numeric	Events count in the blue channel raw data time trace
End Time	Numeric	Measurements time
Clock Time	Numeric	Clock cycle (run length encoding)
Description	Memo	Description of the raw data

Notes

- ⚡ Field **ID** is read only.
- ⚡ Field **Files Count** shows the number of raw data files linked to the record.
- ⚡ This table can be sorted by any field (except *Description*). To perform the sorting by the given field, select this field and choose [Ascending/Descending menu items](#) in the local menu.
- ⚡ Choose [Quick Search menu items](#) in local menu for quick searching the information in the selected field.

An alias is a name and a set of parameters that describe a database resource. BDE applications use aliases to connect with databases.

FCS file contains statistical characteristics like as auto(cross)correlation, photon counting histogram, etc., already calculated by data acquisition card.

Raw data files contains photon arrival times or time lags between consecutive photons. Usually stored in binary file in FIFO mode accordingly special dataformat.

Supported file formats

FFS Measurements database can import data from text files having several data format.

Supported data formats are:

1. Two column data without a caption. Values inside one row can be separated by a number of spaces or tabs. The first column must contain X values, the second Y values. Time has to be in milliseconds for AC(C)F.
2. Three column data without a caption. Values inside one row can be separated by a number of spaces or tabs. The first column must contain X values, the second Y values, the third - weight factors (standard deviations of each Y). Time has to be in milliseconds for AC(C)F.

3. specially formatted files having either SSTC_2Column_data_with_params or SSTC_3Column_data_with_params.

SSTC_3Column_data_with_params data format

File structure:

File must begin from the line #Version=...

Parameters section comes directly after this line.

The data section follows parameters section and must begin from the line #Data

```
#Version=SSTC_3Column_data_with_params
#Type=Autocorrelation (or Crosscorrelation; PCD; FFC)
#Channel=red (or blue)
#SamplePosition=any text up to 30 symbols
#SamplePositionX=any double precision value
#SamplePositionY=any double precision value
#KineticNumber=any integer value
#RepeatNumber=any integer value
#Range=any text up to 60 symbols
#Duration=any double precision value
#Normalization=integer value. It must be 1 for ACF, CCF, FFC, and be equal to either 1 or to
number of processed bins in the intensity for PCD (preferably), i.e. be equal to sum of all bin
heights in the histogram. It is assigned to 1 if it is not supplied.
```

```
#Data
X Y W
0.0002 2.0197656 1.4335435
0.0004 1.8976443 1.3324353
...
```

General comments:

Parameters will be imported only if the #Version equal to 'SSTC_2Column_data_with_params' or 'SSTC_3Column_data_with_params'. See below available parameter names and data types. No spaces must surround '=' sign.

If no parameters are supplied the type is considered to be 'Autocorrelation'

Data section must contain tab or space delimited values. Number of columns in the Data section must be three:

1 column – X (time in milliseconds for AC(C)F)

2 column – Y (do not round values)

3 column – weight (it can be equal to Y (Poisson statistics), 1 (no weight), or be properly calculated). Do not put zeros in this column. A point with zero weight does not participate in the analysis.

Note: Algorithm can also read two channel data (without weight). It is equivalent to setting #Version to SSTC_2Column_data_with_params.

Example:

```
#Version=SSTC_3Column_data_with_params
#Type=Autocorrelation
#Channel=red
#SamplePosition=E5/C3
#SamplePositionX=300
```

#SamplePositionY=150
#KineticNumber=1
#RepeatNumber=5
#Range=[20 60]
#Duration=40

#Data
X Y W
0.0002 2.0197656 1.4335435
0.0004 1.8976443 1.3324353
...