

**"Deadband" module
PRINTED MANUAL**

"Deadband" module

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1 Introduction

Deadband is an area of a signal range or band where no action occurs (the system is dead). The filter module "Deadband" for our data loggers (for example, Advanced Serial Data Logger) is an additional module that provides a method to exclude less significant data records from the final data export. The "Deadband" module can be used to prevent data export for small level changes or insignificant transients, which may otherwise adversely increase an output Excel file or database size. In this case it is best to start with the deadband set to zero and increase it if data flow is very fast. The module has four different dead band methods: absolute, percent, timelimit, countlimit that can be used in any [configuration](#).

2 System requirements

The following requirements must be met for "Deadband" to be installed:

Operating system:

- Windows 95;
- Windows 95 OSR2;
- Windows 98;
- Windows Me;
- Windows NT4;
- Windows 2000;
- Windows XP (all editions) (both x86 and x64);
- Windows 2003 Server (both x86 and x64);
- Windows Vista (both x86 and x64).

Free disk space: Not less than 5 MB of free disk space is recommended.

Special access requirements: You should log on as a user with Administrator rights in order to install this module.

The main application (core) must be installed, for example, Advanced Serial Data Logger.

Notes for Microsoft Vista:

Since our software saves data to the registry and installs to the Program Files folder, the following requirements must be met:

1. You need Administrator rights to run and install our software
2. The shortcut icon of our software will be located on the desktop;
3. Windows Vista will ask for your confirmation to continue the installation.

NOTE: You can configure the user account only once in order not to see the above dialog box any more. Search Google for the solution of this problem.

3 Installing Deadband

1. Close the main application (for example, Advanced Serial Data Logger) if it is running;
2. Copy the program to your hard drive;
3. Run the module installation file with a double click on the file name in Windows Explorer;
4. Follow the instructions of the installation software. Usually, it is enough just to click the "Next" button several times;
5. Start the main application. The name of the module will appear on the "Modules" tab of the "Settings" window if it is successfully installed.

If the module is compatible with the program, its name and version will be displayed in the module list. You can see examples of installed modules on fig.1-2. Some types of modules require additional configuration. To do it, just select a module from the list and click the "Setup" button next to the list. The configuration of the module is described below.

You can see some types of modules on the "Log file" tab. To configure such a module, you should select it from the "File type" list and click the "Advanced" button.

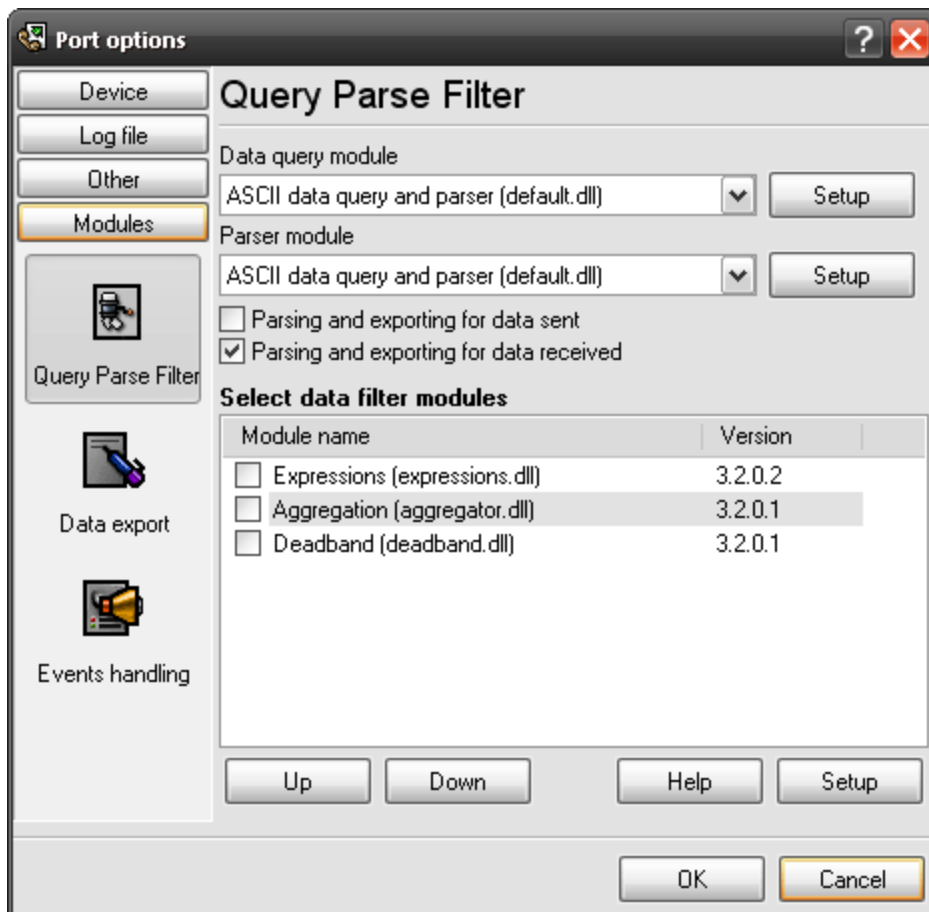


Fig.1. Examples of installed modules

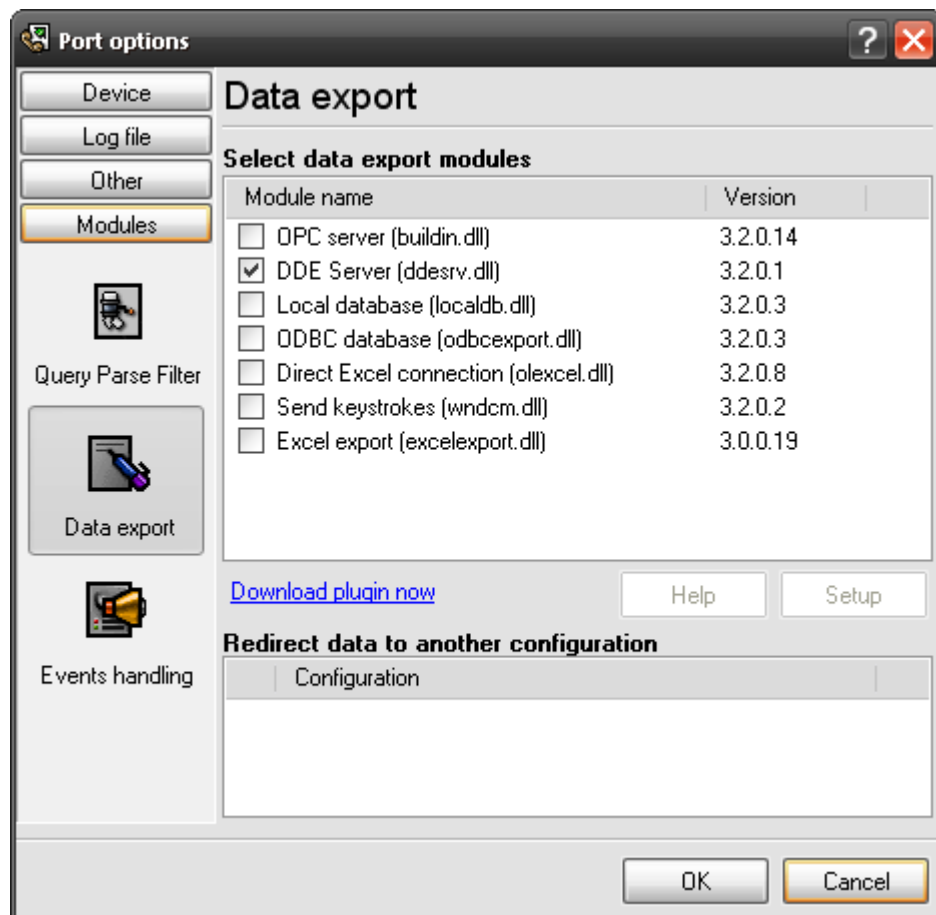


Fig.2. Examples of installed modules

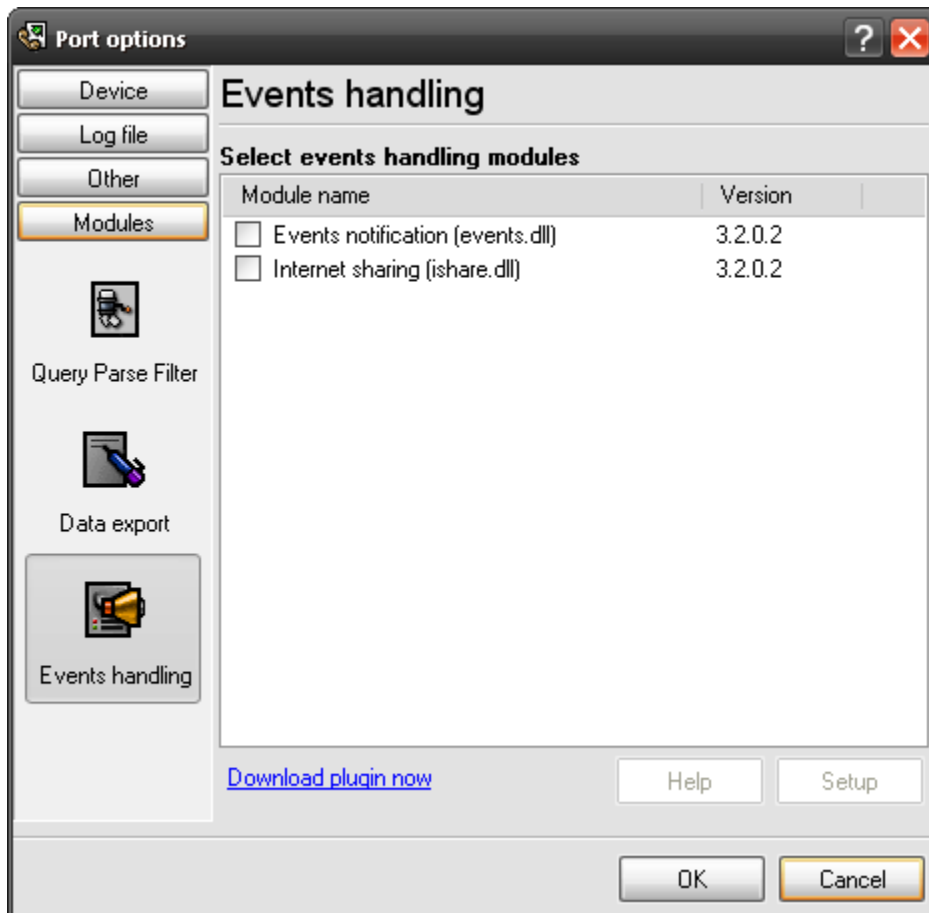


Fig.3. Examples of installed modules

4 Glossary

Plug-in - module

Main program – the program shell that uses this module. For example: Advanced Serial Data Logger

Parser – the module that processes the data flow singling out data packets from it and variables from data packets. These variables are used in data export modules after that.

Core - see "Main program".

5 Configuration

The module configuration is very simple (pic.1). You should specify one or more variables (up to 8) from a data parser module. If the parser returns a variable with a null (empty) value, then this variable will be ignored. If different deadband types are used together there is an AND/OR relationship between them. You can select it in the "**Relationship**" combo-box. The module will ignore any value falling within either deadband, otherwise the module sends data to a data export module.

AND relationship

Only those values falling outside **all** deadbands (or equal to the outermost) will be recorded.

OR relationship

Only those values falling outside one of deadbands (or equal to the outermost) will be recorded.

Deadband 3.0.0 build 1

Specify one or more variables. If few deadband variables are used together then specify a relationship between them. The module will ignore any value falling within either deadband. Only those values falling outside all deadbands (or equal to the outermost) will be sent to a data export module.

Relationship between variables: AND

Deadband variables

SIO2	Count limit	2,000000
CAO	Percent	10,000000
		0,000000
		0,000000
		0,000000
		0,000000
		0,000000
		0,000000

OK Cancel

Pic.1. Configuration window

Deadband types

1. **Absolute** - sets the deadband range to be a absolute value of the last logged data value. Any value differing from the baseline by less than absolute will not be recorded. If a value's difference from the baseline is greater than or equal to absolute, that value is recorded and it

becomes the new baseline for the absolute deadband.

2. **Percent** - sets the deadband range to be a percent of the last logged data value. Every new value is compared to that value, and if their percentage difference is less than percent, the new value will not be recorded. If the difference is greater than or equal to percent, the value is recorded and that value becomes the new baseline for the percent deadband.
3. **Timelimit** - sets the maximum time period (in seconds, a real number) to deadband. When the timelimit is reached, the next new value received will be recorded, even if its value doesn't exceed the deadband. Note that the system does not automatically generate and insert a value when the timelimit is reached; it waits for the next new value. Whenever a new value is recorded the timelimit is restarted. If the timelimit parameter is not used, there is no time limit on how many values are ignored within a deadband.
4. **Countlimit** - sets a maximum number of received values to deadband. When the countlimit is reached, the next new value will be recorded, even if it doesn't exceed the deadband. Whenever a new value is recorded the countlimit is restarted. If the countlimit parameter is not used, there is no count limit on how many values are ignored within a deadband.

6 Troubles?

6.1 Possible problems

No data for publication/exporting – no data is passed for exporting. Solution: configure the parser, make sure that one or more variables are declared in the parser.

Error on binding variable with name %s [%s] – the error usually occurs if data does not correspond to the specified format. For example, the date and time format does not correspond to the data.

Unable to disconnect from the database [%s] and **Unable to connect to a database [%s]** – it is impossible to connect/disconnect to/from the database. You should check the parameters of the database connection. The analysis of the additional information will help you locate the error.

Database access error [%s]. Stop operations with the database? – the message appears if an error occurs during an attempt to execute an SQL query if the second variant of reacting to errors is selected. The message implies a "Yes" or "No" answer. The analysis of the additional information will help you locate the error.

Unable to verify your SQL script [%s] – the message appears when an attempt to analyze your SQL query fails. Check if the syntax of your SQL query is correct.

Tested successfully – the message appears if your database connection is successfully tested. It requires no additional actions.

Database isn't used – the message appears if the module is temporarily disabled (the "Temporarily disabled" check box is selected) or the database name field is empty. Check the connection parameters.

Database isn't selected - the message appears if the database type is not selected. Check the connection parameters.

Database: %s – %s contains the database name. The message appears if the database connection is successful. Usually, you see it when you call the module for the first time. It

requires no additional actions.

Invalid data block length (columns=%d,length=%d) – an internal application error. It means that the data sent by the parser is in an invalid format. Perhaps, you are using the module incompatible with the version of the Advanced Serial Data Logger kernel. Update the versions of both the kernel and the module.

The time of connection is not due yet (%d,%d) – the message appears during an attempt to connect to the database after the connection to it has been lost and the "Reconnect after" option is enabled. No additional actions are required.

Invalid procedure call. Bad arguments –an attempt to call the module using invalid parameters. Perhaps, you are using the module incompatible with the version of the Advanced Serial Data Logger kernel. Update the versions of both the kernel and the module.

Writing to the database is complete - the message appears if your queue of SQL queries is successfully executed. It requires no additional actions.

Writing to the database is complete with errors – the message appears if the executing your queue of SQL queries was interrupted by an error. It requires no additional actions.

Your SQL is empty. Please, specify some SQL text first – the message appears if you do not enter the text for your SQL query. Check if the options on the "SQL queue" tab are configured correctly.

Invalid temporary path – the path to the temporary file specified by you does not exist. Enter a new path in the "Temporary folder" field on the "Errors handling" tab.

%s, %d – will be replaced by additional information.