The DL-T645-2007 plugin
PRINTED MANUAL

DL-T645-2007 plugin

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1   Introduction

The DL-T645-2007 protocol is used in many Chinese multifunction energy meters to unify data exchange between a host computer and meters (for example, it can be a single-phase energy meter or multi-rate watt-hour meter). The plugin implements some parts of the DL-T645-2007 protocol to read current values.

This protocol adopts a half-duplex communication mode with a master-slave structure. A computer or server is a master station that polls multiple watt-hours meters which act as a slave station.

This module has the following features:

- It can read current data from any DL-T645-2007-compatible device.
- The plugin can work with serial and network interfaces.
- It can poll meter data by a custom interval.
- It can poll data from multiple devices at the same time.

2   System requirements

The following requirements must be met for "DL-T645-2007" to be installed:

Operating system: Windows 2000 SP4 and above, including both x86 and x64 workstations and servers. The latest service pack for the corresponding OS is required.
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 and above:

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 to this problem.

3   Installing DL-T645-2007

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.
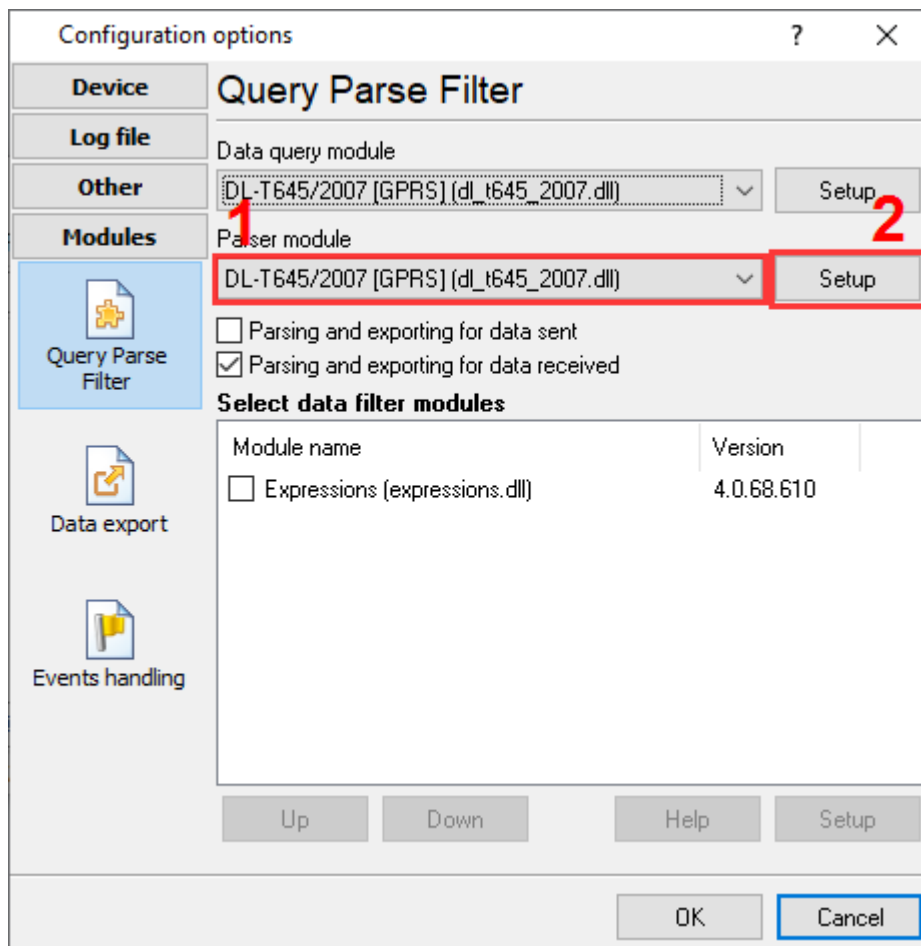

Fig.1. Example of installed module

4   Glossary

Main program - it is the main executable of the application, for example, Advanced Serial Data Logger and asdlog.exe. It allows you to create several configurations with different settings and use different plugins.

Plugin - it is the additional plugin module for the main program. The plugin module extends the functionality of the main program.

Parser - it is the plugin module that processes the data flow, singling out data packets from it, and then variables from data packets. These variables are used in data export modules after that.

Core - see "Main program."

5   Requests queue

To add a new item, click "Actions - Add new request." The dialog window will be shown (fig.1). Enter a request description that can contain any characters and click the "OK" button.
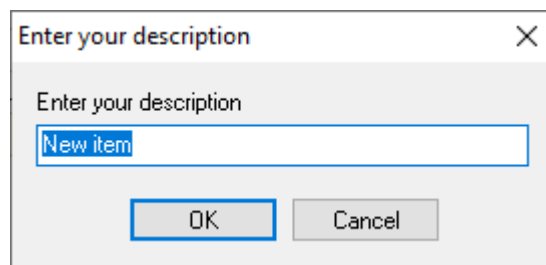

Fig.1. Name dialog

The new data request will appear in the requests tree (fig.2). Each request has few important options:

Device address - it is a communication address of a watt-hour meter used in point-to-point communication. The address field comprises 6 bytes, each of which contains two BCD-coded digits. Therefore, the address can be 12 digits long. You should specify the device address as a decimal number.

Function - it is a request type to read the data from a watt-hour meter. Each function may return one or more values at once.

Request timeout - After reaching the timeout limit, the program will automatically cancel the current request and execute the next request in the queue. The timeout value depends on the media speed on device performance, and if the data transfer rate over media is slow, then the timeout value should be larger.

Fig.2. DL-T645-2007 request

6 Request method

The plugin can send requests in two modes:

- **Once, on program startup** - the program will send a request once when the program starts.
- **Polling** - the program will send a request periodically based on an interval specified. The interval between requests depends on the network on which master (program) and slave (device) is running. If the network is slow, then the time for each request will be larger and vice versa. Because the program executes all requests in the queue one by one, the time between requests depends on the number of requests in the queue.

Fig.3. Request methods

If you have added several requests to the queue, you can move them up or down. To do it, select a request, click the "Action" button, and select an action ("Move up" or "Move down").

You can also click this button to change a request's description or remove a request from the queue.

You can also perform the same actions by using the context menu that pops up when you right-click items in the request tree.