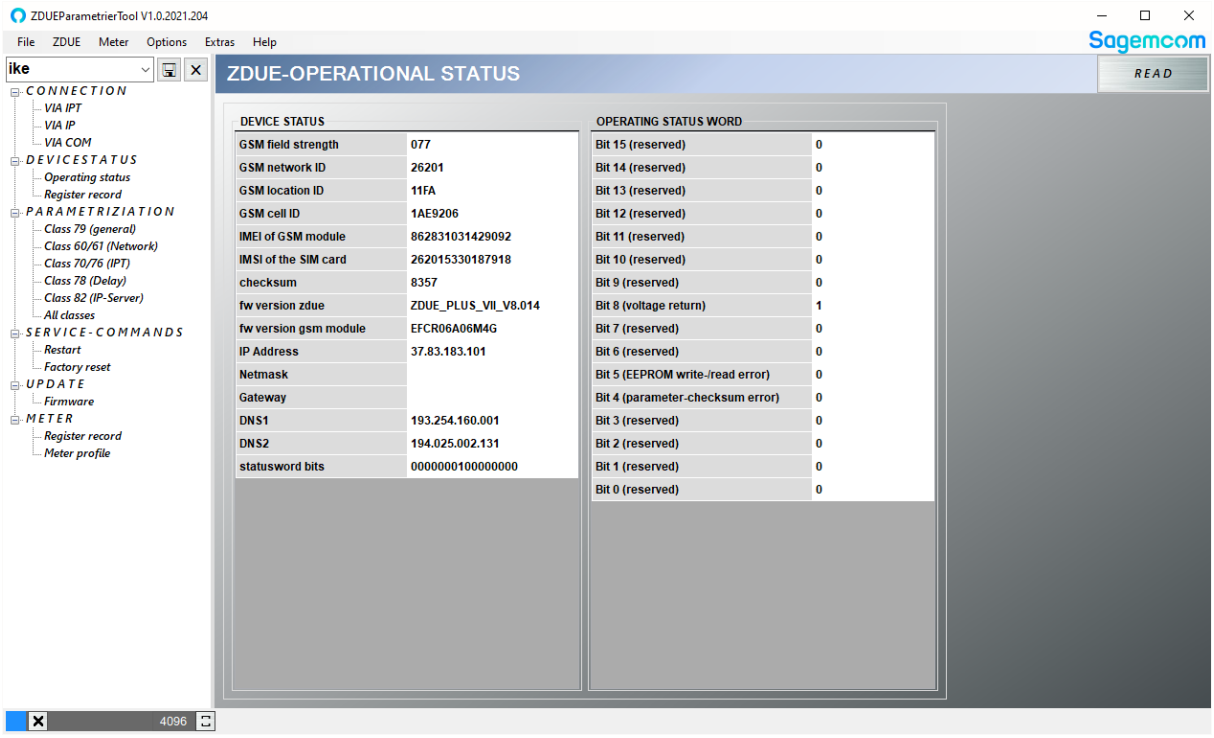
# ZDUEParametrierTool
# Manual




Sagemcom
Dr. NEUHAUS

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Product No. DNT8234
Doc. no. 8234AD002, version 1.1

## Table of contents

# 1 Introduction

The ZDUEParametrierTool serves the following purpose:

- Establishing the communication channel between PC and ZDUE by means of IP, IPT or COM
- Execution of read and write operations (according to DIN EN 62056-21)
- Parameterization of the ZDUE
- Load and save configurations as file and in database
- Executing service commands to the ZDUE
- Firmware update
- Reading meter data, if meter is connected (IP, IPT)

The ZDUEParametrierTool is suitable for the following products:

- ZDUE-GSM-PLUS-V
- ZDUE-GPRS-PLUS-VI
- ZDUE-LTE-PLUS-VII

# 2 Installation

For the tool a setup is delivered, with which an installation on current Windows PC's can be accomplished.

Minimum requirements:

- Operating system WIN7, recommended WIN10
- .NET Framework 4.7.2 https://dotnet.microsoft.com/download/dotnet-framework/net472
- minimum resolution 1280x800, recommended 1920x1080

The setup is done by means of an installation wizard in a few steps. After successful installation, the tool can be started from the start menu under Sagemcom => ZDUEParametrierTool.

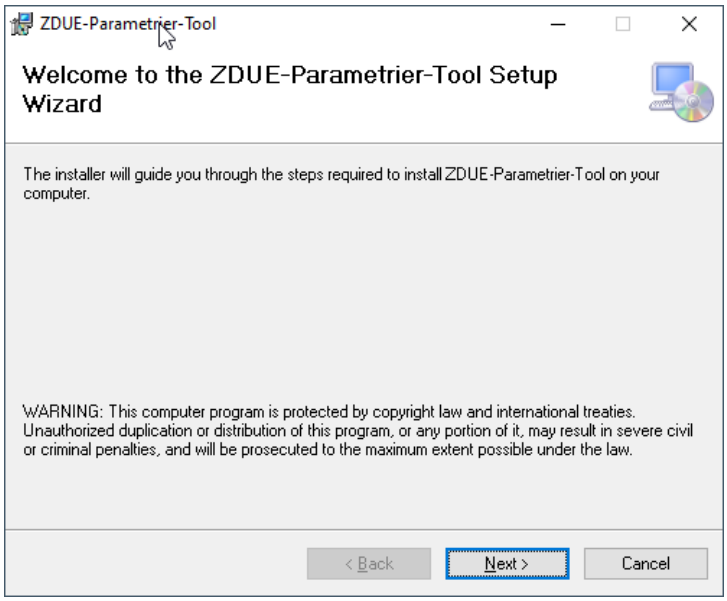


**Figure 1- Installation Wizard**

When the tool is started for the first time, initial databases are automatically created under C:\Users\%UserName%\Documents\Sagemcom\ZDUEParametrierTool. Tool settings, as well as ZDUE configuration data, are stored in these databases. All settings that affect the tool are stored in the settings.db. Settings/configurations that affect the ZDUE are stored in named databases.

# 3 First program start - licensing

A license key must be entered the first time the program is started.

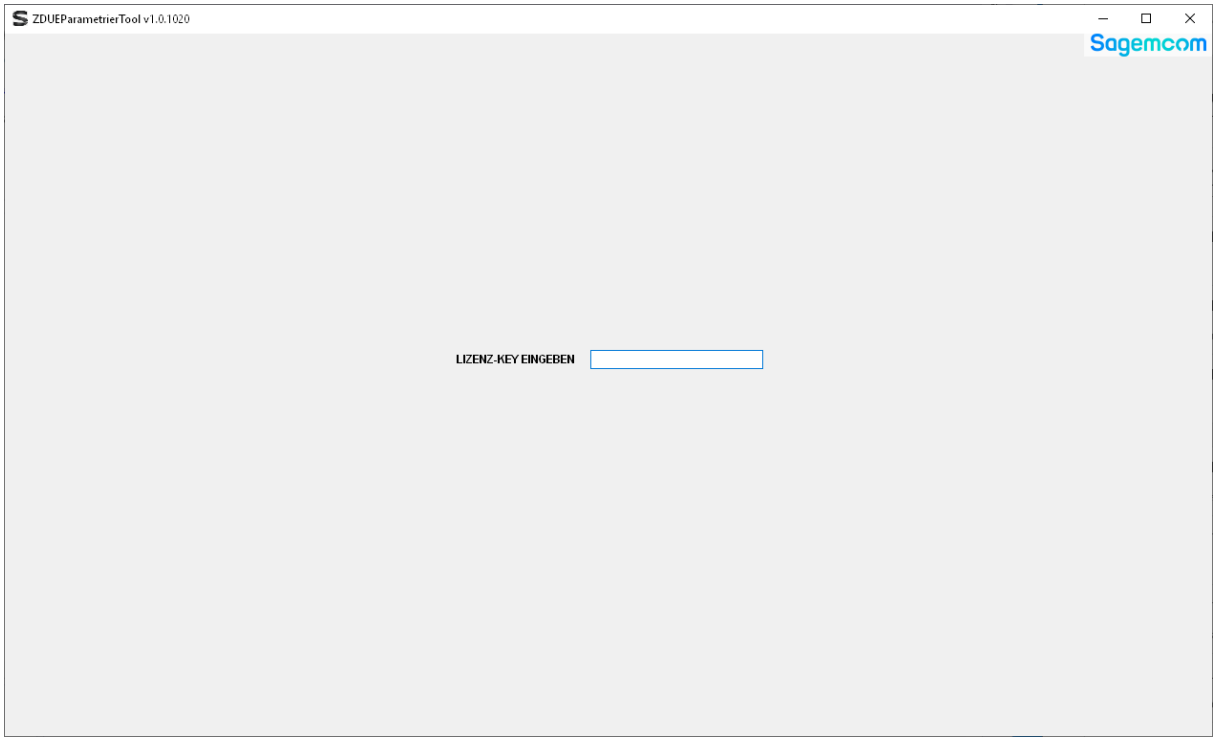


**Figure 2- Licensing Screen**

If a valid key is entered, the program interface is unlocked. The key must be entered only once. It is reserved that with newer program versions possibly another key will be necessary.

# 4 Profiles, configurations

A profile consists of the configurations of all views of the ZDUE Parameterization Tool and thus contains the complete configuration of a ZDUE. It can be stored in the current database under a name specified by the user or exported as a *.csv file. Accordingly, stored profiles can be opened from the current database or imported from a *.csv file. When opening or importing a profile, all views are assigned the values of the loaded profile.

## 4.1 Profile management - database

The profiles in the current database are managed using the selection box and the two buttons above the tree diagram:

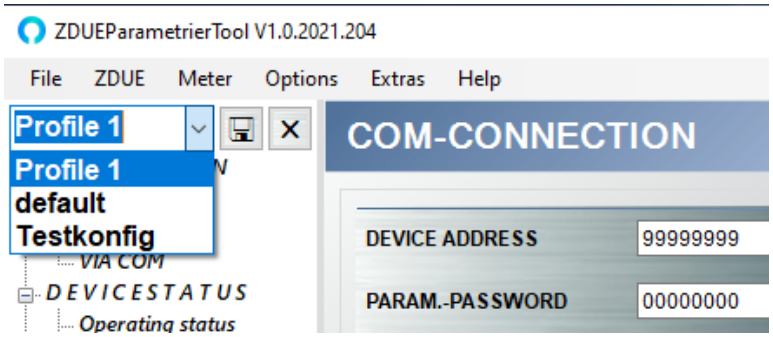


**Figure 3- Profile management**

The following operations are available:

- **Loading a profile from the current database:** Click on a profile name in the selection box. The corresponding profile is loaded directly.
- **Create a new profile in the current database:** Enter the name of the new profile to be created in the selection box and use the Save button to write the profile to the database.
- **Deleting a profile from the current database:** Select the profile to be deleted via the selection box and remove it from the database using the x button.

Furthermore, it is possible to save the configuration of each view individually, under an individual name in the database. This makes it possible to assemble and save profiles from different, prefabricated configuration modules (see 5.11.3).

## 4.2 Profile management - File

Importing and exporting profile files is described in chapters 5.2and 5.3

# 5 Program menu

The program menu is divided into

- File
- ZDUE
- Meter
- Options
- Extras
- Help

The menu items are explained in more detail below:

## 5.1 File

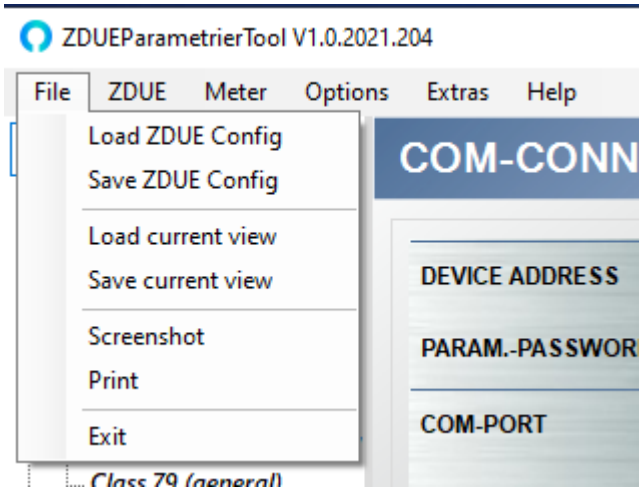


**Figure 4- File Menu Item**

Menu item File enables file operations, such as loading and saving the ZDUE configuration and loading and saving the current display. In addition, File offers the option to make a screenshot or a printout of the interface as well as to exit the program.

## 5.2 Load ZDUE Config

Loads the complete ZDUE configuration from a CSV file into the tool interfaces. After loading, the parameters can be edited in the tool and written to the ZDUE.

## 5.3 Save ZDUE Config

Saves the complete ZDUE configuration to a CSV file. Before saving, an overview of the configuration to be saved will open. If necessary, additional information can be entered in this overview. This is purely optional and will be ignored when the file is loaded. If placeholders were used during parameterization, these should be explained - this is what the yellow fields are for. More information about placeholders in chapter 5.9.4.7.

It is not recommended to edit CSV files with ZDUE configurations externally. If you want to change parameters, use the tool for this.

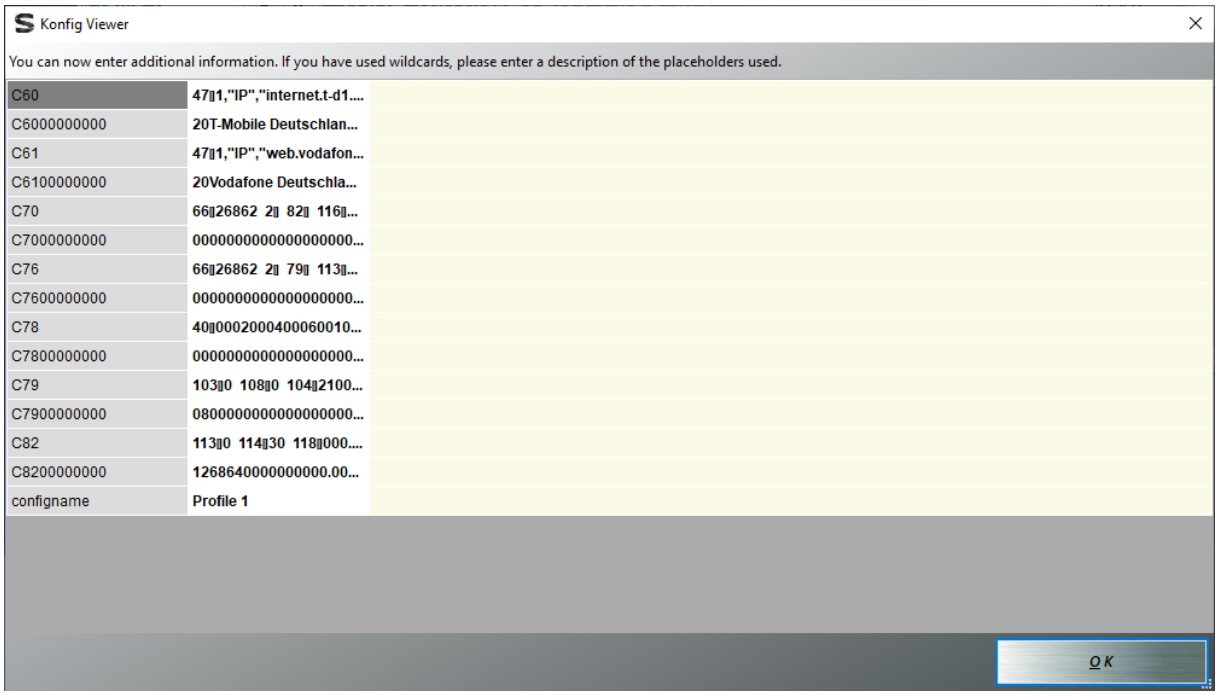


**Figure 5- Config Viewer**

After confirming this dialog with OK, the location for the CSV can be selected and the file can be saved.

## 5.4 Loading current display

Loads the parameters from a CSV file into the current tool display. If the CSV file contains parameters that are unusable for the current display, they are ignored.

## 5.5 Save current display

Saves the parameters from the current display to a CSV file. Depending on the display, the relevant parameters from the surface fields or tables are saved.

## 5.6 Screenshot

Creates an image file from the current view, which is saved in JPG format.

## 5.7 Print

Similar to screenshot, but with subsequent printing.

## 5.8 Exit

Exits the tool. The last used tool settings are applied/updated on exit.

## 5.9 ZDUE

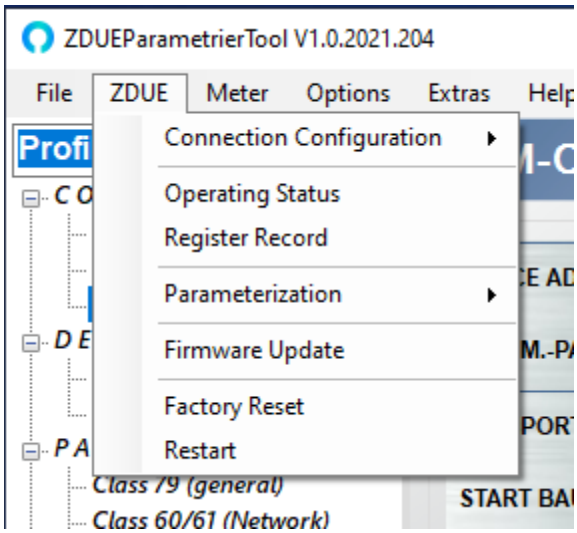


**Figure 6- ZDUE menu item**

The ZDUE menu item comprises the main functionality of the tool and is structured analogously to the tree view with the nodes on the left side of the tool.

- Connection configuration (IPT, IP, COM)
- Operating status
- Register record
- Parameterization (ZDUE classes)
- Firmware update
- Factory reset
- Restart
- Write PIN

### 5.9.1 Connection configuration

#### 5.9.1.1 VIA IPT

This menu item opens the connection view for IPT. All views start with default settings that can be changed. The following settings are possible in this view:

- Device address - the IEC address of the ZDUE
- Param. password - the setting password for parameterization commands
- IPT call number - the call number/identifier at the IPT service to be connected
- Control center password
- IPT-1 IP address / port - IP address and port of the gateway for IPT communication
- IPT-1 Username - the login name to the IPT service
- IPT-1 Password - the password at the IPT service
- IPT-1 Hostname – optional URL as IPT Server-target
- Response Delay [ms] - time period until a response is sent
- Timeout [ms] - timeout for missing responses to DIN-EN-62056-21 commands

In this view, a second IPT address can be entered as a fallback. If the connection to IPT1 should not be possible, the connection to IPT2 will be tried automatically.

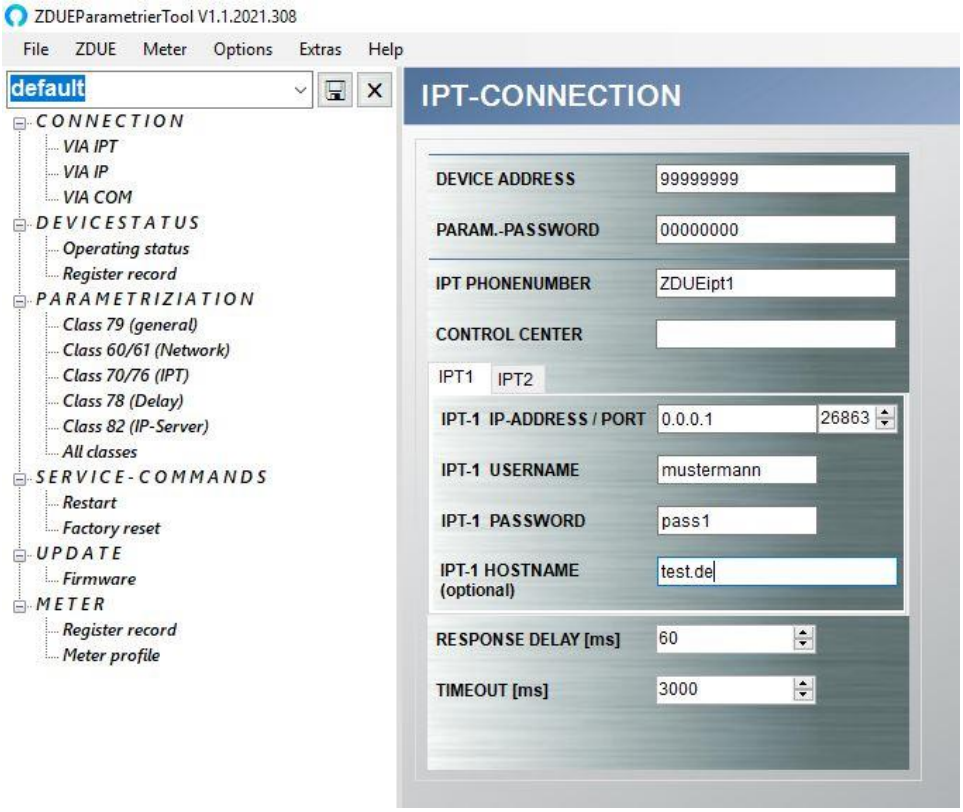


**Figure 7- IPT Connection**

The tool already starts with preset values. As a rule, only the parameters that start with "IPT" must be set in this view. When all parameters have been set, a connection attempt to the IPT provider can then be initiated by clicking on "CONNECT". If the connection was successful, the connection feedback button in the lower left corner of the tool turns blue. If the connection could not be established, the button remains gray.

### 5.9.1.2 VIA IP

This menu item opens the connection view for IP. The following settings are possible in the IP view:

- Device address - the IEC address of the ZDUE
- Param. password - the setting password for parameterization commands.
- IP address / port - IP address and port for communication via a mobile network.
  The current IP address of the SIM card used in the ZDUE must be entered here. A distinction must be made here:
  - **SIM cards with fixed IP address assignment** (fixed IP) always receive the same IP address from the mobile network provider, so this parameter only needs to be set once.
  - **SIM cards with dynamic IP address assignment** receive a new IP address from the provider each time they are dialed in, so that an IP address entered here is only valid for a limited period of time.

  It is therefore strongly recommended to operate the IP mode only in combination with a SIM card with fixed IP address assignment.
- Control Center password
- Response Delay [ms] - time period until a response is sent.
- Timeout for missing responses to DIN-EN-62056-21 commands

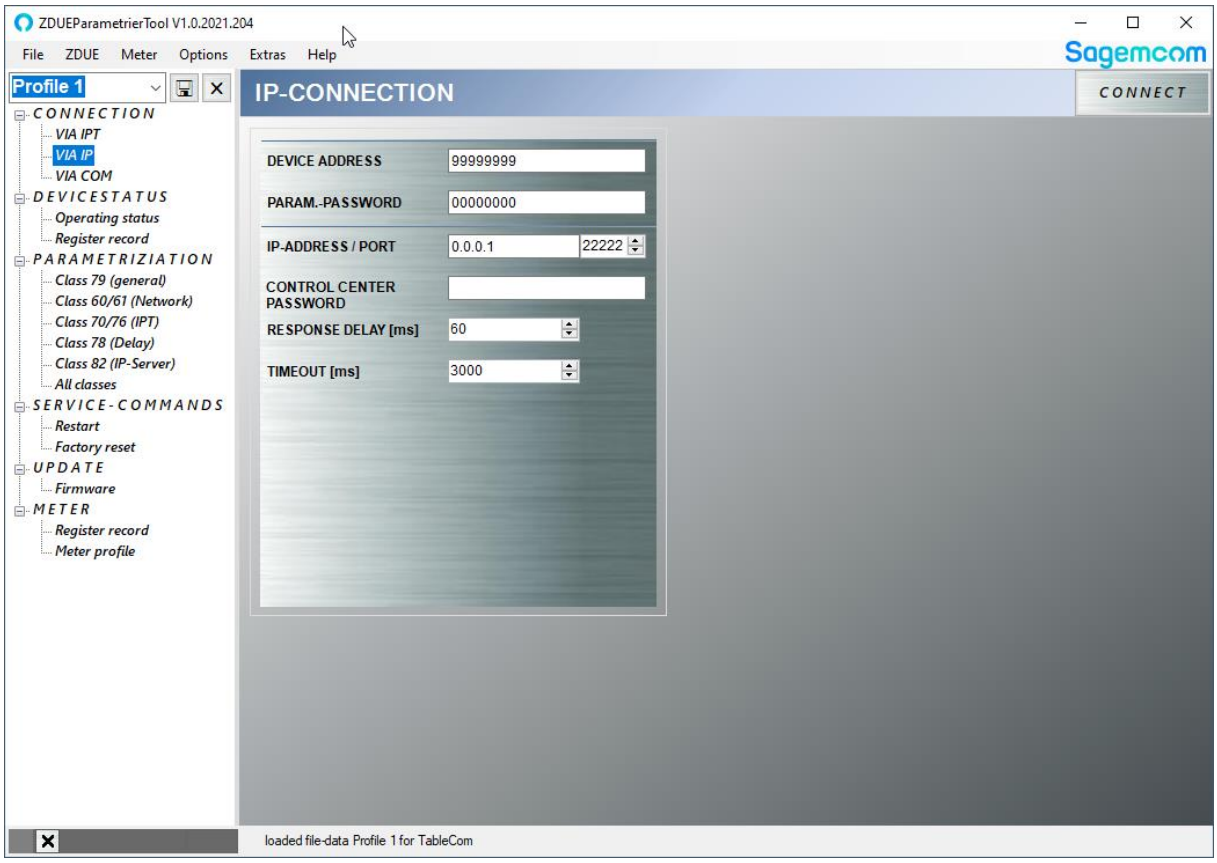


**Figure 8- IP Connection**

The tool already starts with preset values. Usually, only the IP address and port must be set in this view. If all parameters are set, a connection attempt via IP can be initiated by clicking on "CONNECT". If the connection was successful, the connection feedback button in the lower left corner of the tool turns blue. If the connection could not be established, the button remains gray.

### 5.9.1.3 VIA COM

This menu item opens the view for serial connections (COM). The following settings are possible in the COM view:

- Device address - the IEC address of the ZDUE
- Param. password - the setting password for parameterization commands.
- COM port - this combo box lists all COM ports that are currently available on the PC. Select the COM port to which the ZDUE is connected here.
- Start baud rate - Start baud rate (according to DIN EN 62056-21)
- Max baud rate* - the maximum baud rate used by the ZDUEParameterizationTool
- Databits* - the format for data transfer via the COM port, usually 8
- Parity* - the parity for data transmission via the COM port, usually NONE.
- Stop bits* - the number of stop bits for data transmission via the COM port, usually 1.
- Response Delay [ms]* - time period until a response is sent.
- Timeout [ms]* - Timeout for missing responses to DIN-EN-62056-21 commands.

The parameters marked with * are hidden by default. By clicking on the ▼ button they are shown.

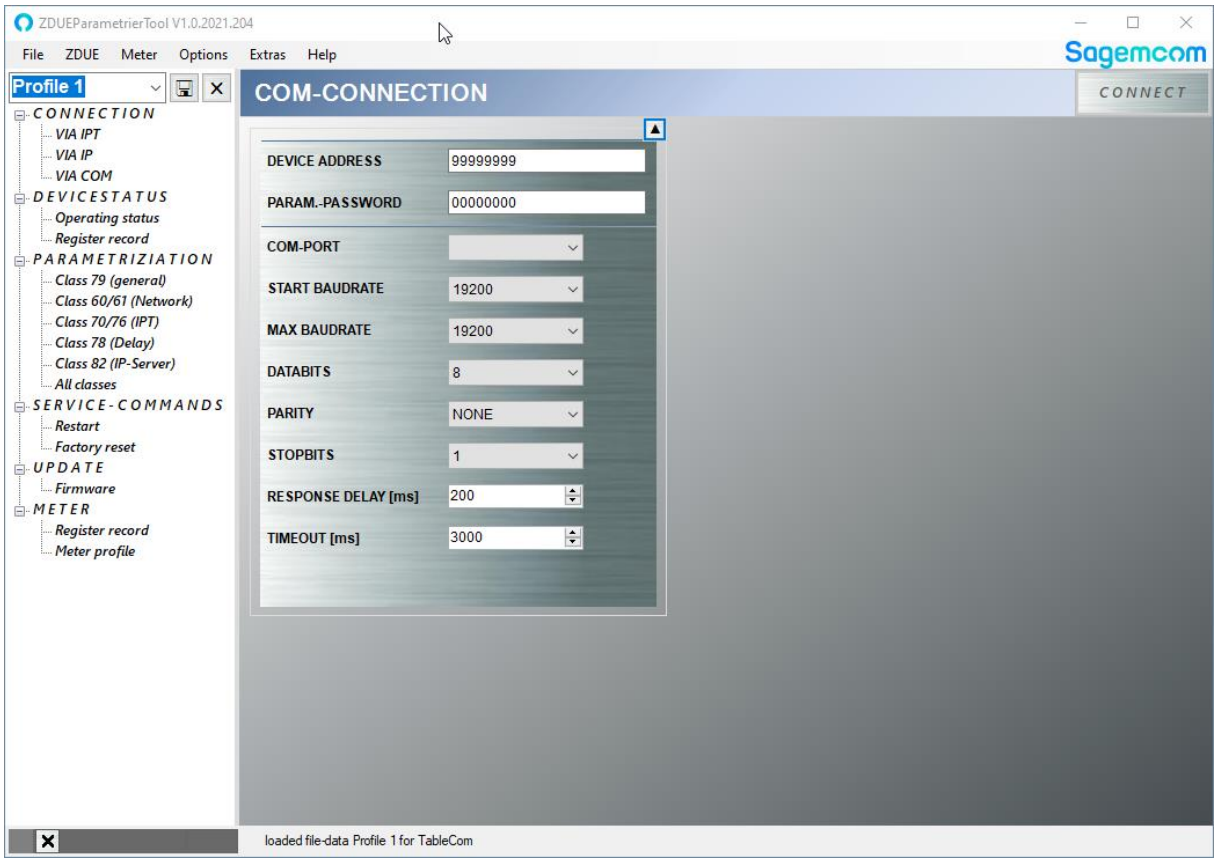


**Figure 9- COM connection**

The tool starts already with preset values. As a rule, only the correct COM port must be selected in this view. When all parameters are set, an attempt to connect via the COM port can be initiated by clicking on "CONNECT". If the connection was successful, the connection feedback button in the lower left corner of the tool turns blue. If the connection could not be established, the button remains gray.

## 5.9.2 Operating status

This view shows the operating status. The display is divided into information on the device status and the operating status word.

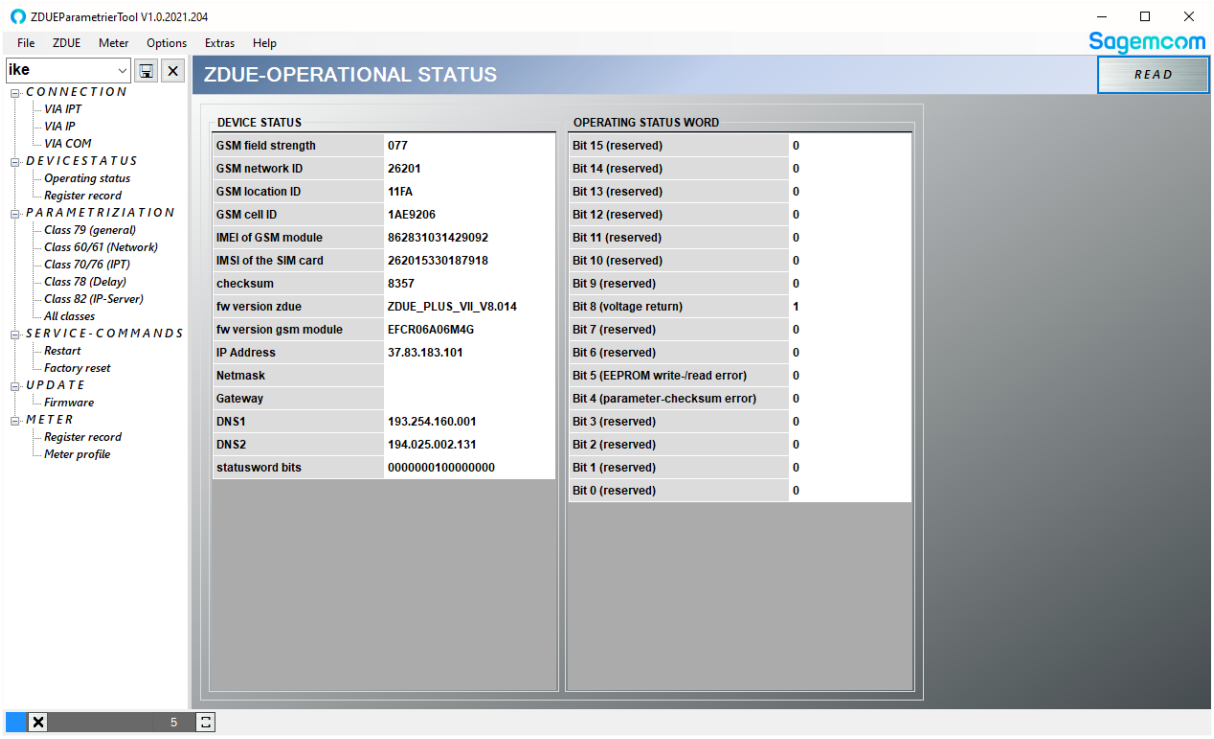


**Figure 10- ZDUE operating status**

### 5.9.3 Register record

This view shows the register data record and the error status of the ZDUE. In the last line of the register data set table, the entire query is additionally indicated as raw data. In addition to the complete error word, the error status table lists the error bits used by the ZDUE along with their description individually.

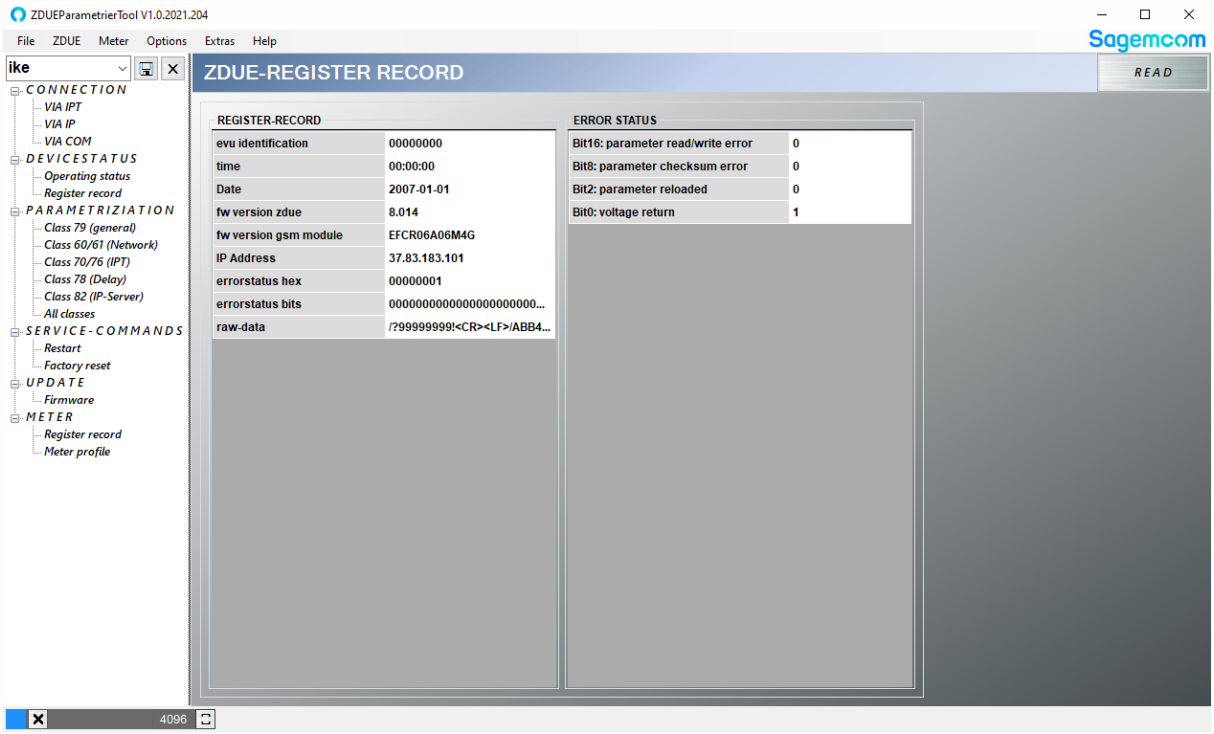


**Figure 11- ZDUE register data set**

### 5.9.4 Parameterization

In the *PARAMETER* section, the individual parameter classes of a ZDUE can be read/loaded, edited and written to the device. The following parameter classes are supported:

- Class 79 (General)
- Class 60/61 (net)
- Class 70/76 (IPT)
- Class 78 (Delay)
- Class 82 (IP server)
- All classes (summary for setting all parameters simultaneously)

When the program is started, the data stored in the current profile is transferred to the class views. If no data has been read and saved by the ZDUE yet, the ZDUEParametrierTool will load the corresponding default values.

#### 5.9.4.1 Class 79 (General)

Class 79 contains the general operating parameters of the ZDUE. The parameters are combined into logical groups. To protect against invalid entries, the ZDUE Parameterization Tool performs a value range check.

The following operations are available:

- **READ** The parameters of class 79 will be read from the ZDUE and updated in the view.
- **WRITE** The parameters from the view are written to class 79 of the ZDUE program.

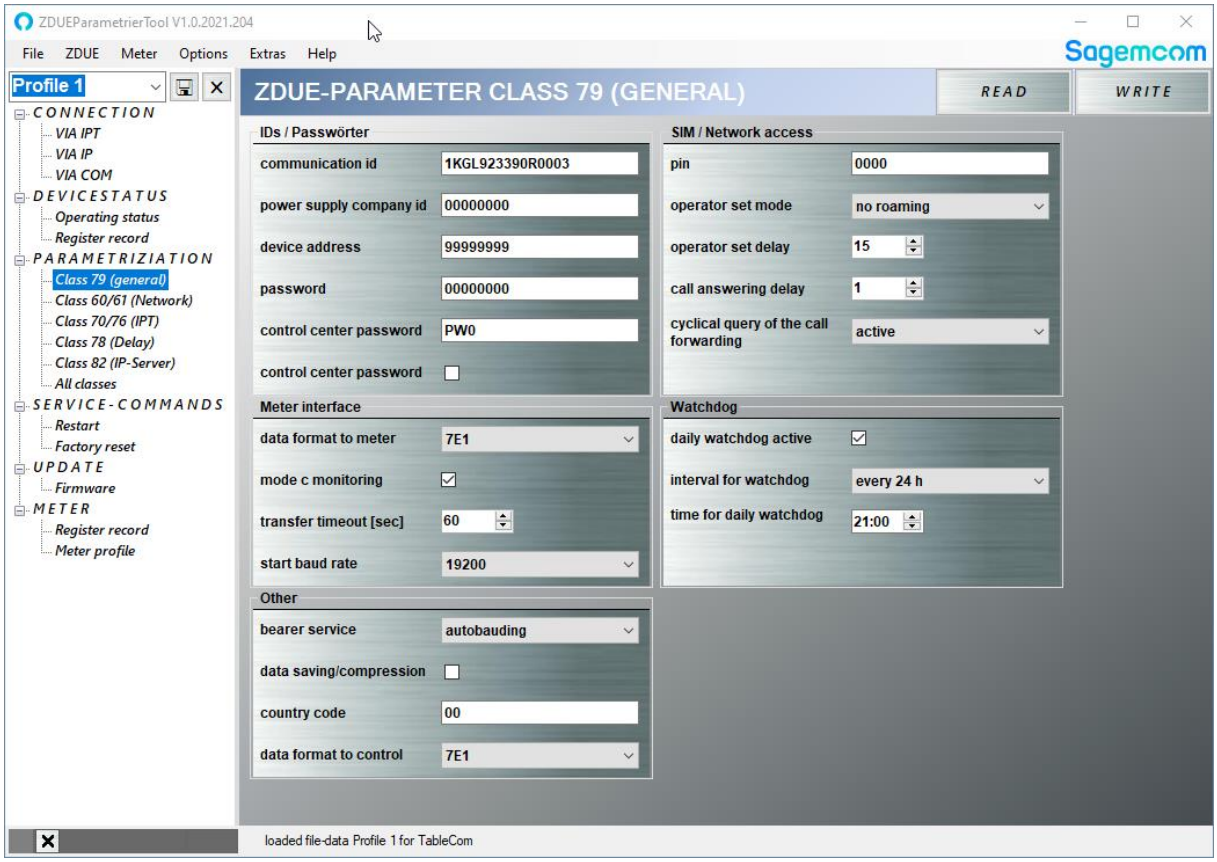


**Figure 12ZDUE parameterization class 79 (general)**

### 5.9.4.2 Class 60/61 (net)

The access parameters for two different mobile network operators can be stored in classes 60 and 61. To protect against invalid entries, the ZDUE Parameterization Tool performs a value range check.

During operation, the ZDUE uses the IMSI of the inserted SIM card to determine the GSM network ID of the mobile network provider used. If this matches one of the two GSM network IDs parameterized in class 60 or class 61, the access parameters of the corresponding class will be used.

The *Network operator 1 (60)* or *Network operator 2 (61)* checkboxes can be used to specify whether the actions to be performed should be applied to the respective class.

The following operations are available:

- **READ** The parameters of classes 60 and/or 61 are read from the ZDUE and updated in the view.
- **WRITE** The parameters from the view are written to the classes 60 and/or 61 of the ZDUE.

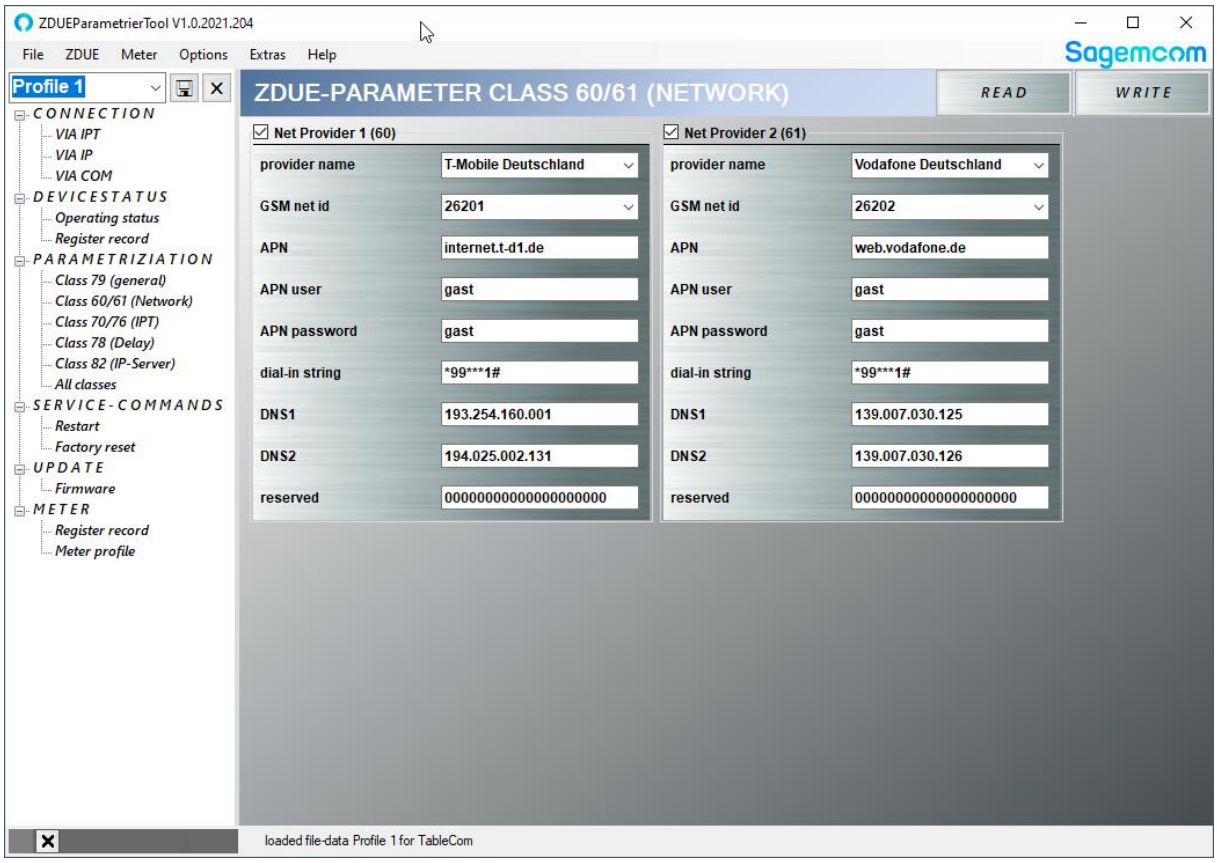


**Figure 13- ZDUE parameterization class 60/61 (network)**

### 5.9.4.3 Class 70/76 (IPT)

The access parameters for two different IPT masters can be stored in classes 70 and 76. To protect against invalid entries, the ZDUE parameterization tool performs a value range check.
The *IPT Primary (70)* or *IPT Secondary (76)* checkboxes can be used to specify whether the actions to be performed should be applied to the respective class.
The following operations are available:

- **READ** The parameters of classes 70 and/or 76 are read from the ZDUE and updated in the view.
- **WRITE** The parameters from the view are written to classes 70 and/or 76 of the ZDUE.

The "R" button can be used to show/hide the reserved (i.e. not used) parameters for these classes.

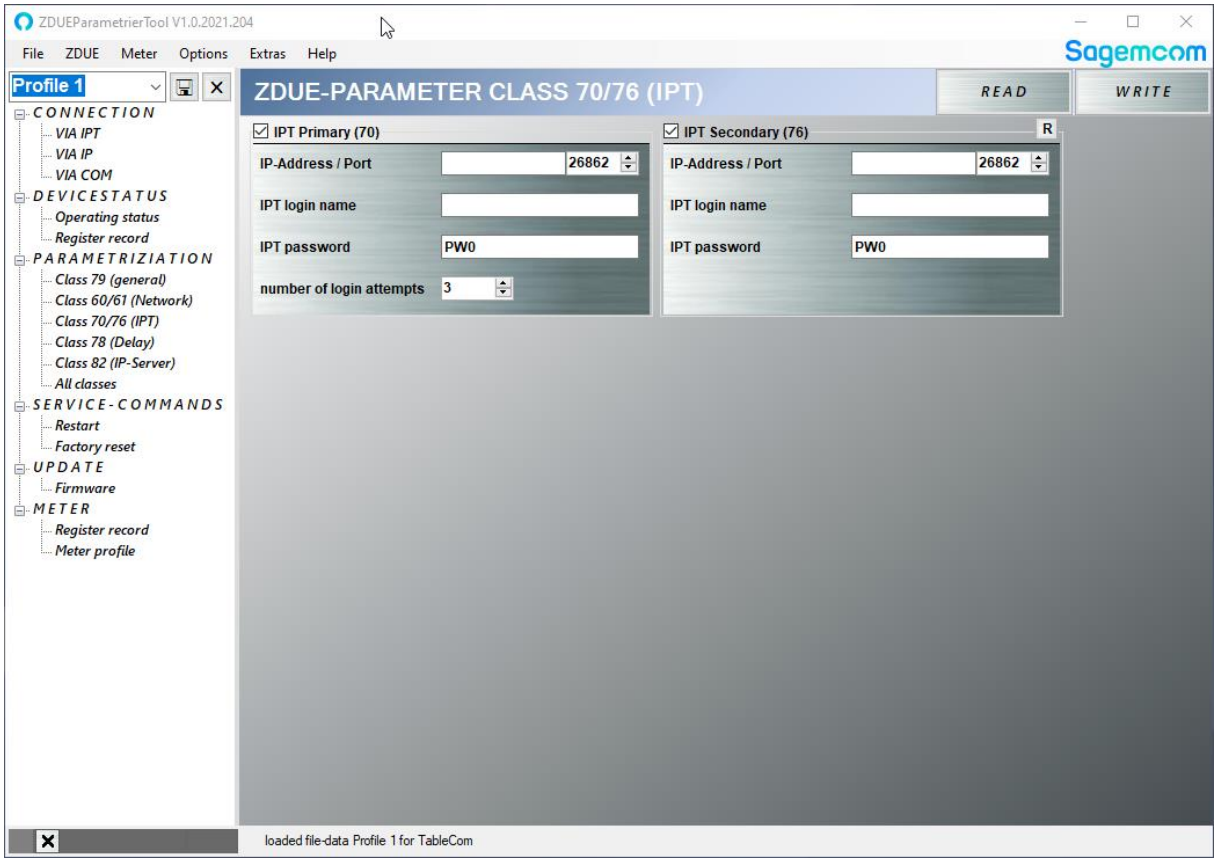


**Figure 14- ZDUE parameterization class 70/76 (IPT)**

### 5.9.4.4 Class 78 (Delay)

This class defines the redialing (mobile network) or the login behavior (IPT master) of the ZDUE. The delays can be set individually or as a total string. To protect against invalid entries, the ZDUE parameterization tool performs a value range check.

The following operations are available:

- **READ** The parameters of class 78 will be read from the ZDUE and updated in the view.
- **WRITE** The parameters from the view are written to the classes 78 of the ZDUE are written.

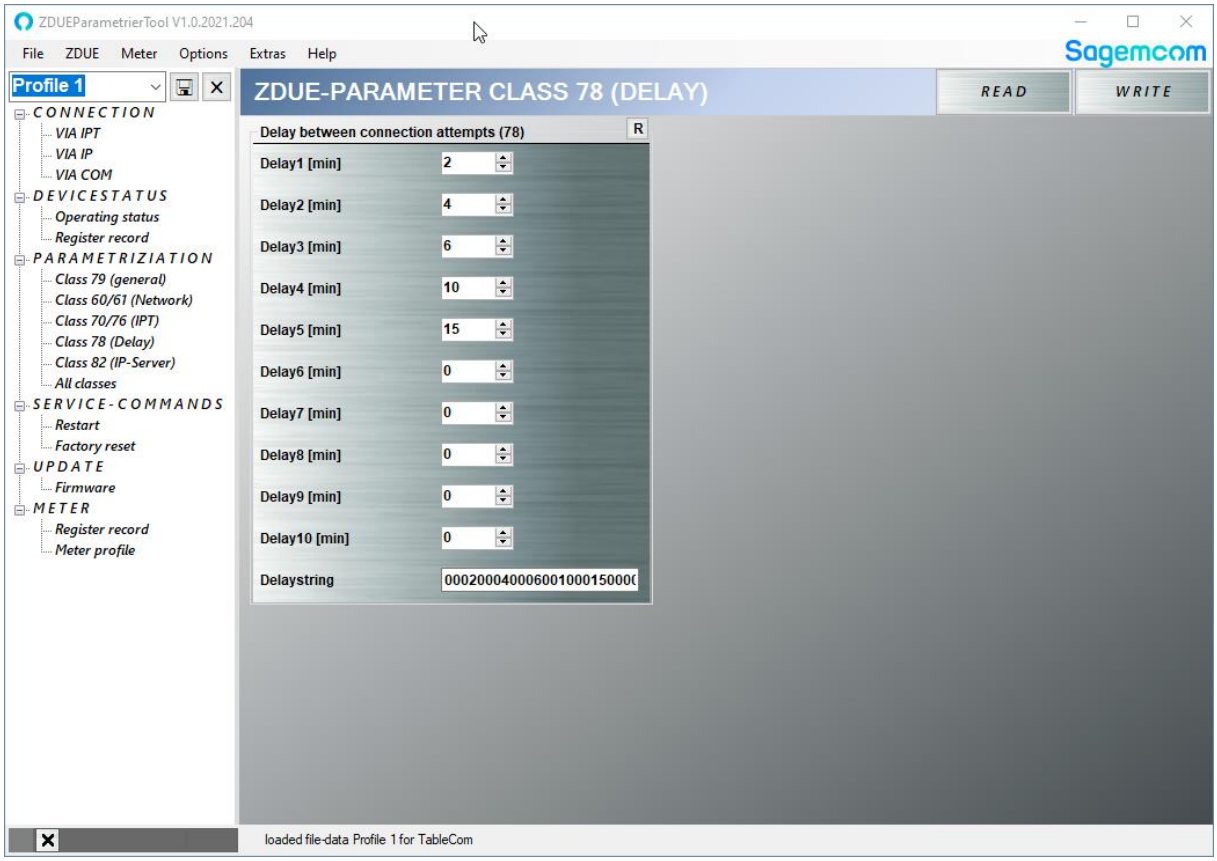


**Figure 15- ZDUE parameterization class 78 (delay)**

### 5.9.4.5 Class 82 (IP server)

Class 82 describes mobile radio operating parameters and the settings relevant for IP server mode. To protect against invalid entries, the ZDUEParameterizationTool performs a value range check. The following operations are available:

- **READ** The parameters of class 82 will be read from the ZDUE and updated in the view.
- **WRITE** The parameters from the view are written to the classes 82 of the ZDUE are written.

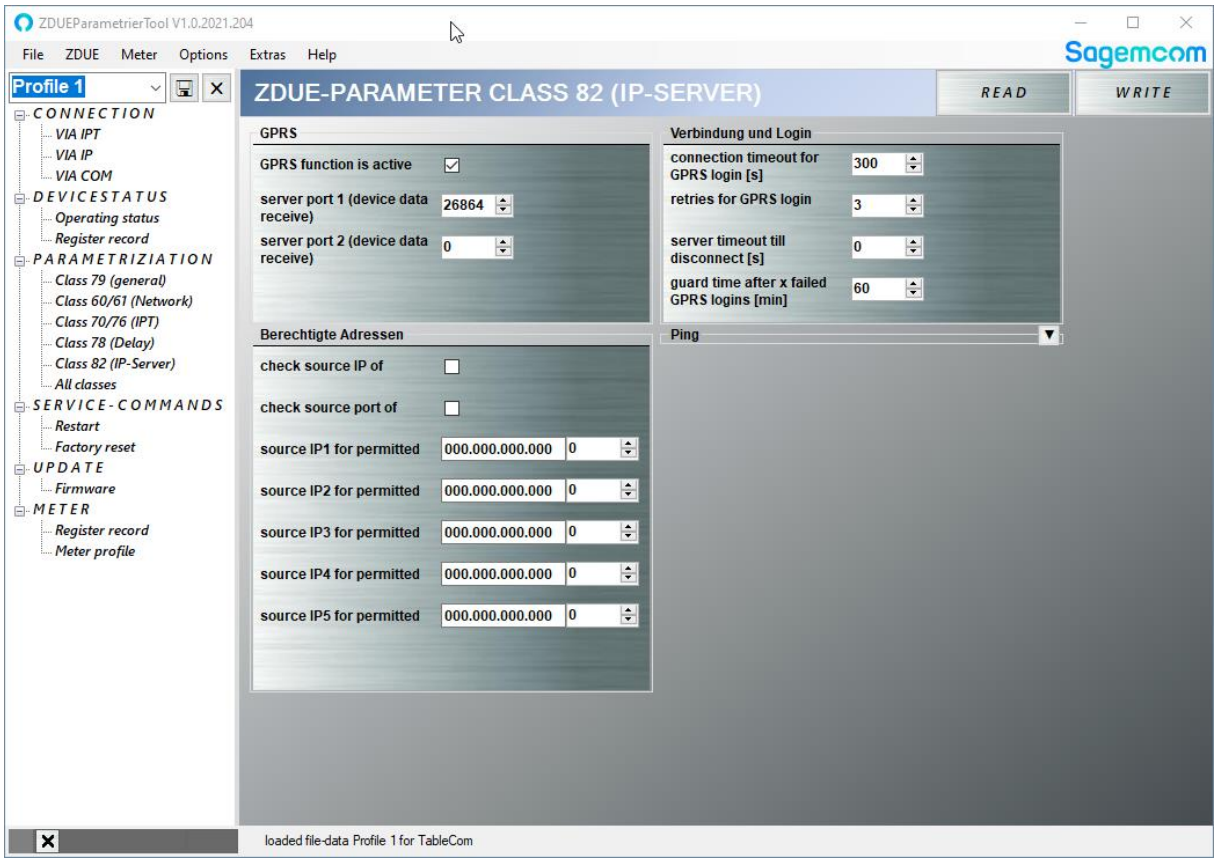


**Figure 16- ZDUE parameterization class 82 (IP server)**

### 5.9.4.6 All classes

This view displays all classes of the ZDUE in tabs and allows you to edit the complete ZDUE configuration at once. The input fields are divided into logical groups. The individual views in the tabs are analogous to the class views described above. To protect against invalid entries, the ZDUE Parameterization Tool performs a value range check.

The following operations are available:

- **READ** The parameters of all classes will be read from the ZDUE and updated in the respective tab views. After the end of the readout process is completed, a pop-up window opens that allows the read values to be to additionally transfer the read values to the individual views.
- **WRITE** The parameters from the *All classes* view are written sequentially to the ZDUE.

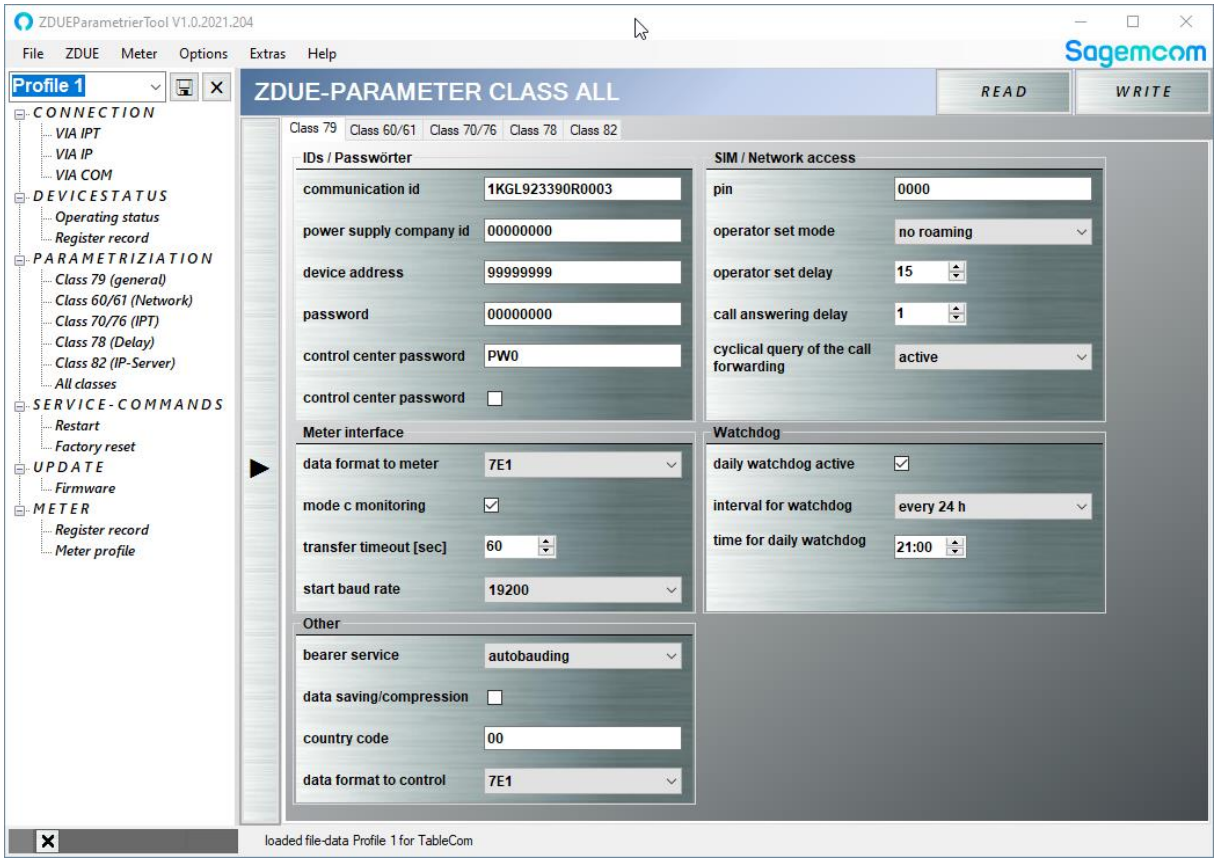


**Figure 17- ZDUE Parameterization Class All**

To open a parameter overview, you can click the button with the arrow to the left of the class view. The parameter list represents a summary of all parameters of the ZDUE. This table can be saved as XML by right-clicking. The parameter list is filled anew with each *READ.* With *UPDATE,* manual changes in the class views can be transferred to the list.

The parameter list is for information purposes only.

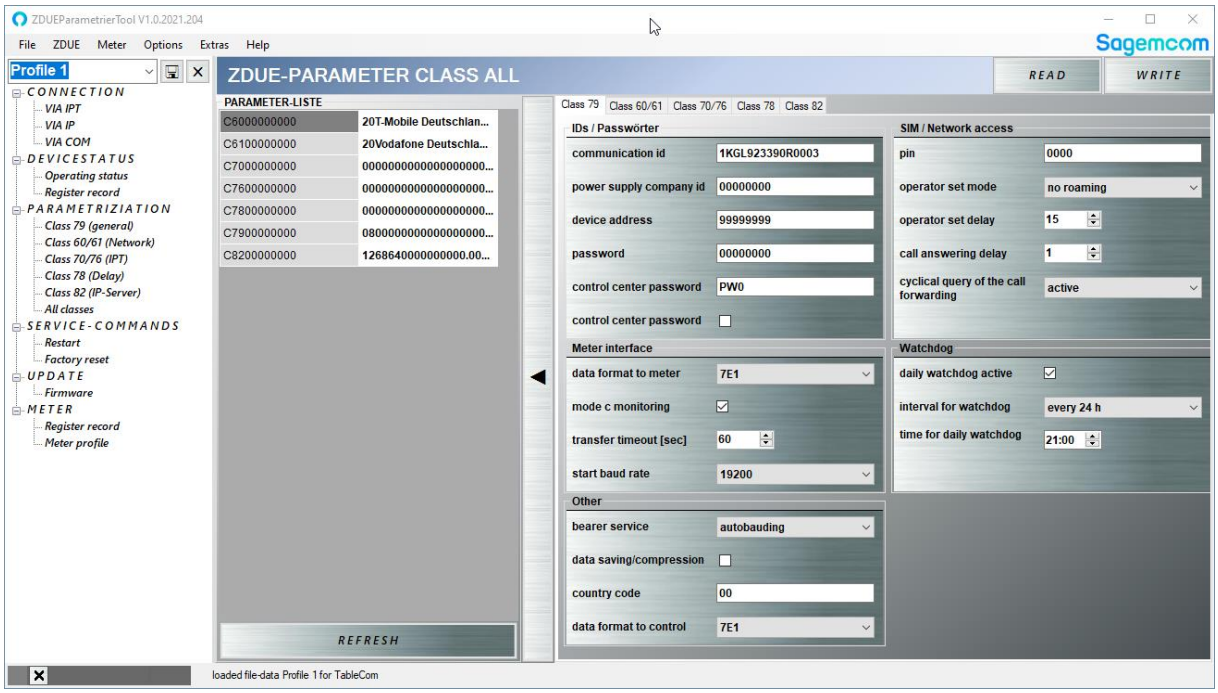


**Figure 18ZDUE parameterization class All, parameter list**

### 5.9.4.7 Placeholder

It is possible to use placeholders for certain ZDUE parameters. All placeholders start with a *$ character*. If a placeholder is defined, the input field turns blue. When the first *$ character is* typed, a list of possible placeholders is displayed. If no list is displayed, the input field is not intended for placeholders. If you want to define your own placeholders, you should explain them textually when saving the ZDUE configuration. To save the read-out ZDUE configuration, see also Chapter 4.1.2.

Attention. Parameters that contain placeholders should not be transferred to the ZDUE because the ZDUE will automatically reject incorrect and invalid values.

Placeholders are intended for external use only. They offer the possibility to use predefined - configurations for several devices by replacing the placeholders with device-specific values (e.g. IPT login name, password) when creating the device-specific configurations.

### 5.9.4.8 Firmware update

This view allows the execution of firmware updates. For this purpose, a firmware file (*.bin) is selected via the directory button. As soon as a file has been selected, the update process can be started via the "UPDATE" button. No further activities should be performed in the tool for the duration of the process. After the process is completed, the status bar shows whether the firmware update was successful.

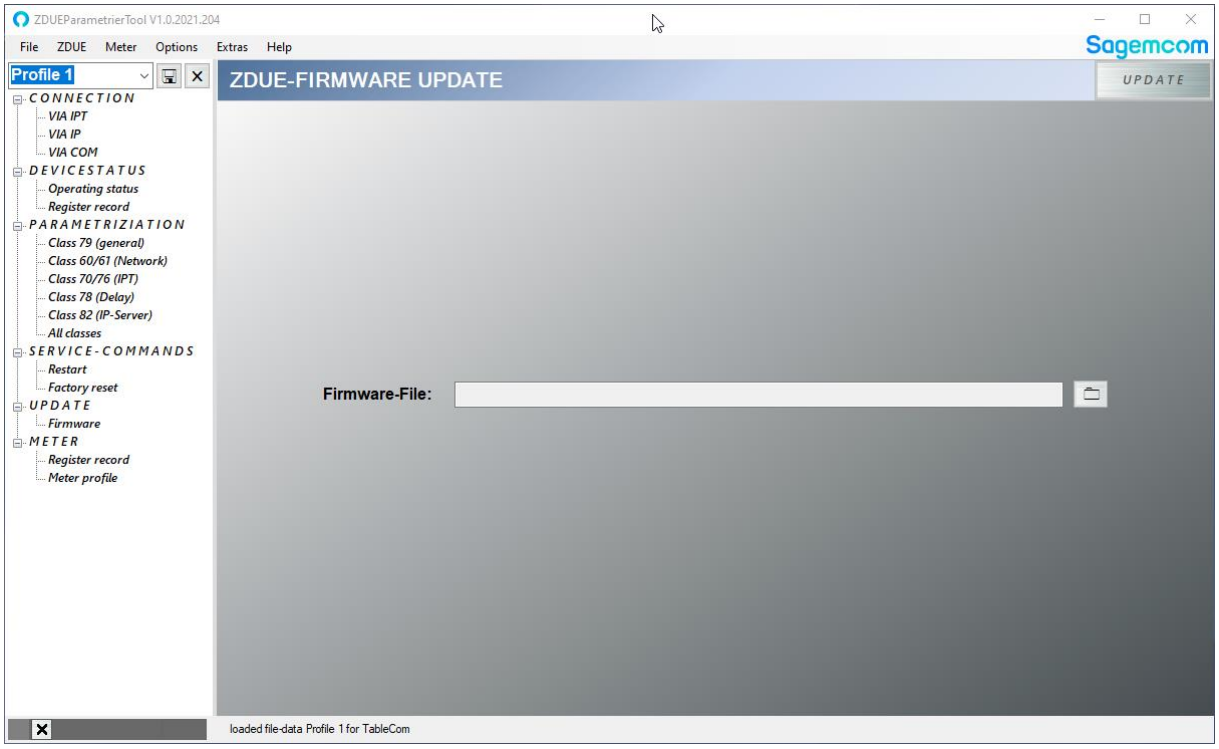


**Figure 19- ZDUE firmware update**

### 5.9.5 Factory reset

In this view, the ZDUE can be reset to the factory settings.

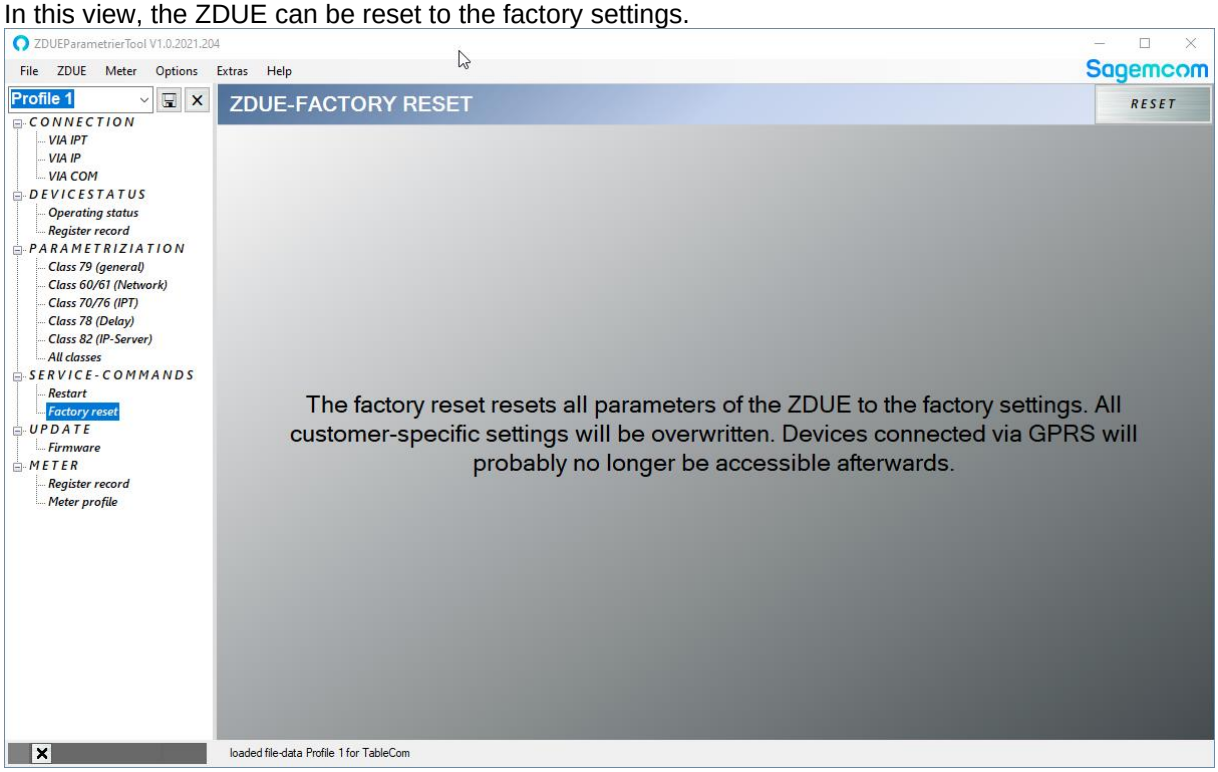


**Figure 20- ZDUE factory reset**

### 5.9.6 Restart

This view triggers the SW restart in the ZDUE.

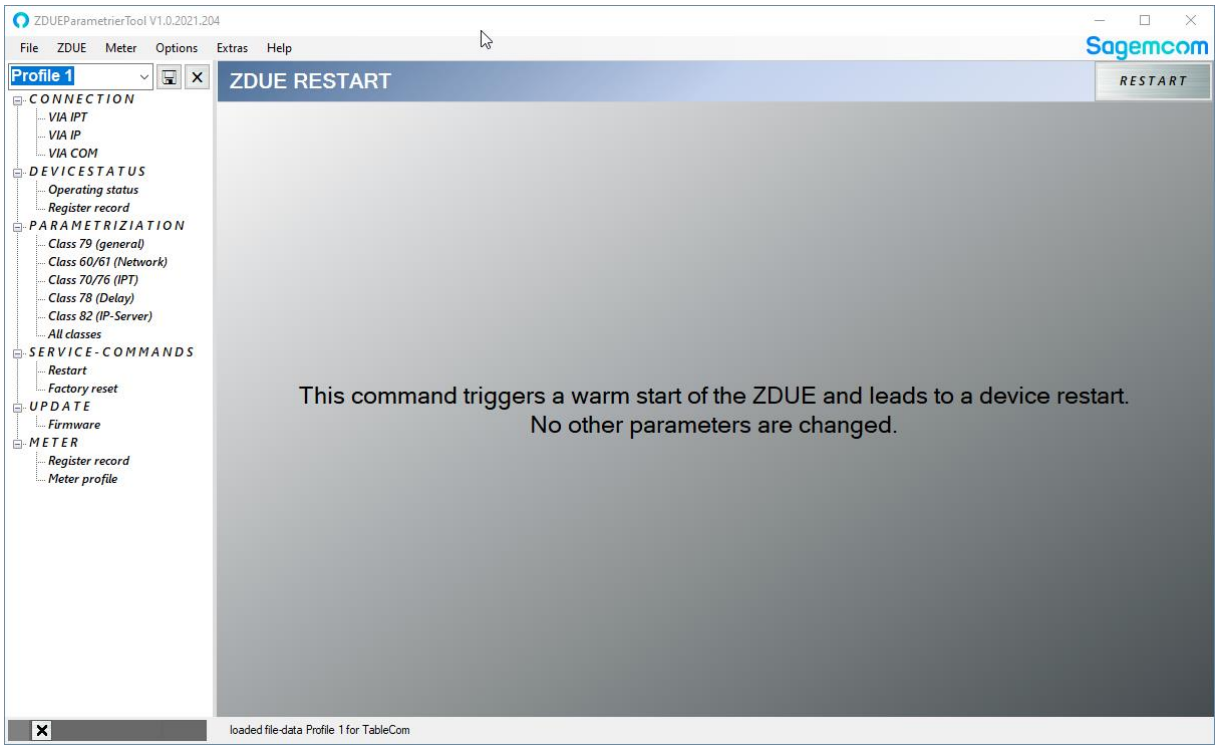


**Figure 21- ZDUE restart**

## 5.10 Meter

This menu item enables communication with meters. A distinction must be made here:

- **meters that are connected to the ZDUE:** The meters can only be read out via a cellular connection, i.e. an IP or IPT link must be established between the PC running the ZDUEParameterizationTool and the ZDUE before the readout. Local readout via the serial interface of the ZDUE is not supported by the device.
- **Meters that are connected locally to the reading PC:** If a meter is connected directly via its own RS232 interface or an optical probe with RS232 interface to the PC running the ZDUEParameterizationTool, it can be read out locally via the COM port of the PC.

Query options:

- **Register record**
- **Load profile (and other profiles)**

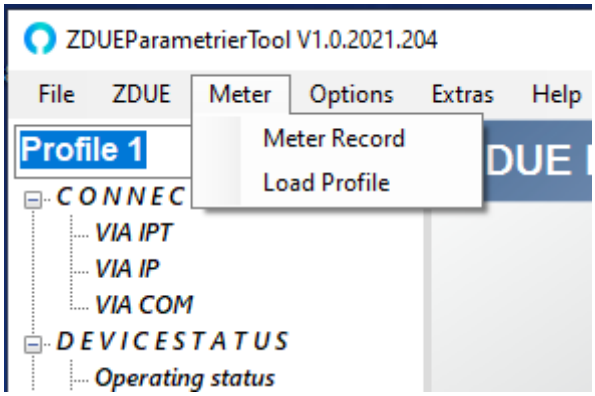


**Figure 22- Meter menu item**

### 5.10.1 Meter register data set

In this view the register data record of the meter can be read out. A meter number can be entered or the query can be started as a broadcast (leave field empty). After the reading process is completed, the view is filled with the corresponding values. In addition, the record is automatically saved with date in the currently selected database.

With the x-button next to the date this record can be deleted. If you want to delete all records with this meter number, you can click on the x-button next to the meter number.

The date entry can be replaced by your own text. This is written away together with the data record by clicking on the save button next to the meter number.

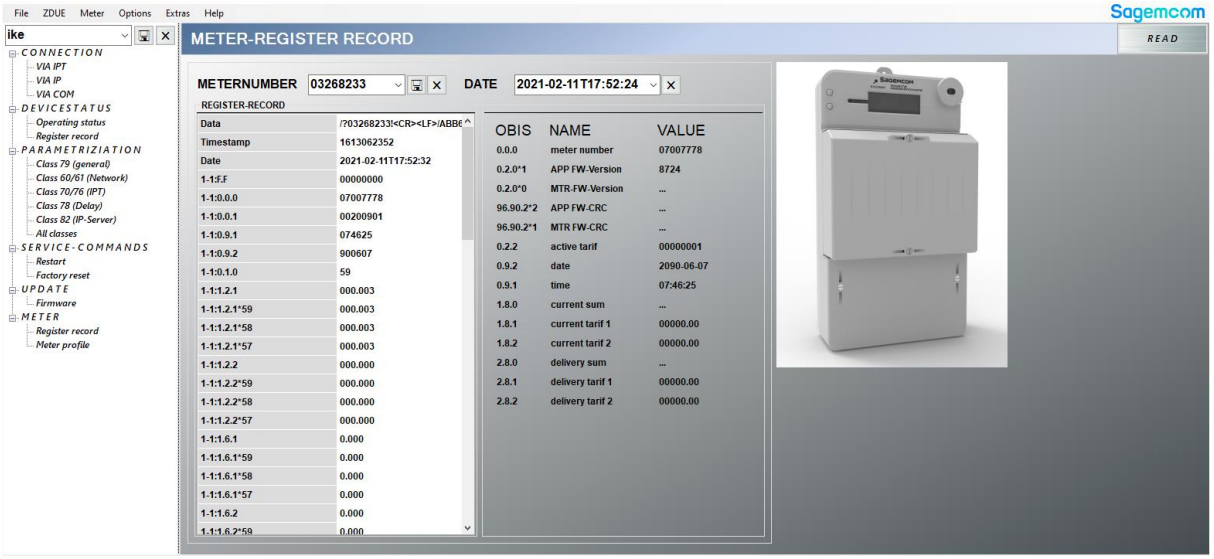


**Figure 23- Meter register data set**

## 5.10.2 Meter load profile / meter profile

This view allows the reading of meter profiles. By default, the load profile is queried. Via the arrow button next to the *DATE field,* extended query options can be displayed. Here you can select the profile number and limit the time range.

Attention. For some meter types, the load profile is in profile 02 instead of profile 01.

All queries are displayed in tabular form and automatically saved to the database after each read.

With the x-button next to the *DATE field* the record can be deleted. The x-button next to *METER NUMBER can be* used to delete all records kept under this meter number. The date entry can be replaced by your own text. This is written away by clicking on the save button next to the meter number together with the data record.

It is also possible to show or hide certain columns. To do this, expand the *column configuration with the* corresponding arrow button. If Obis IDs are detected in the data, they can be displayed as a separate column.

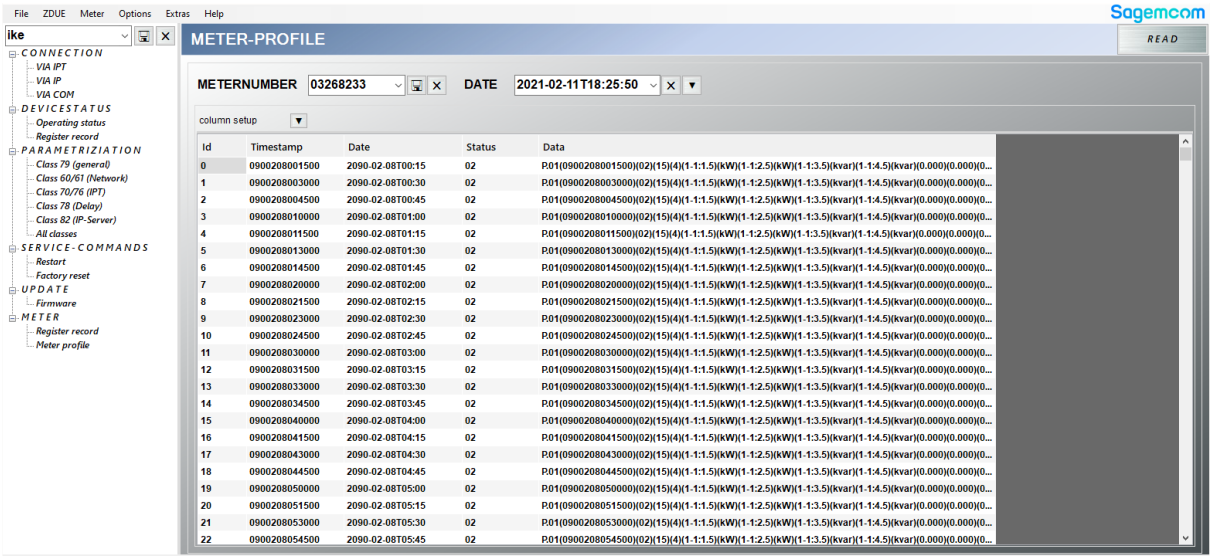


**Figure 24- Meter profile**

## 5.11 Options

The Options menu item offers switching on/off certain partial views and tool modes, such as:

- Trace
- Menu
- Automatic configuration
- Automatically format values

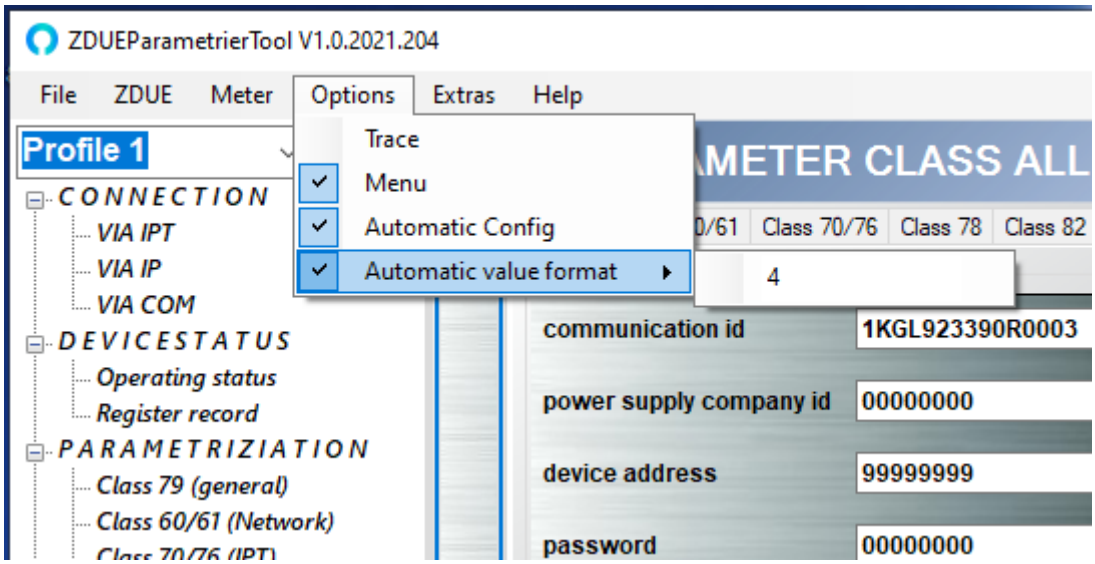


**Figure 25- Options menu item**

### 5.11.1 Trace

When the trace view is displayed, an area is opened on the right side of the tool that displays the data communication (according to DIN EN 62056-21). The *status log* can be displayed via another tab.

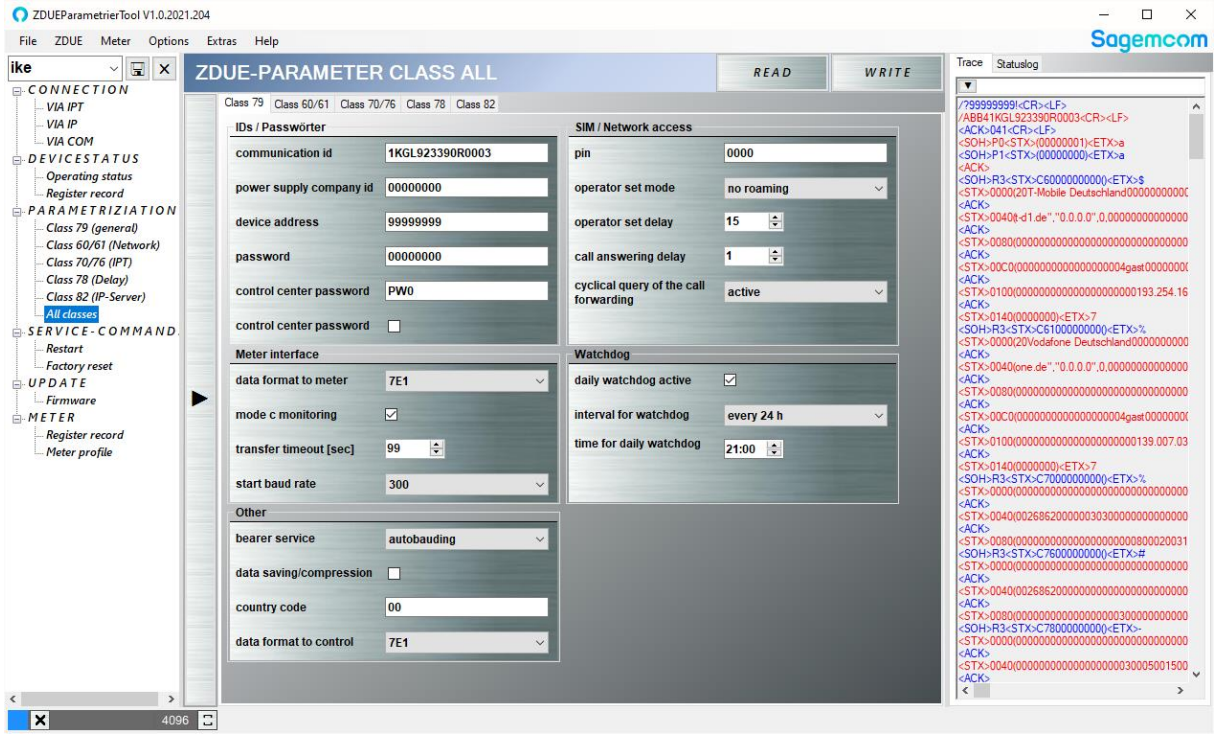


**Figure 26- Trace**

The trace section is optional and mainly intended for savvy users who need additional information.
Using the arrow button below the trace, you can show the trace options:

- **Display format of the trace (ASCII/Hex)**
- **Enable output of the trace to a file**
- **Automatic testing of the BCC according to DIN EN 62056-21**

If *Log output to file is* activated, the complete communication recording is also saved in the document directory of the tool. By default this is:
C:\Users\%UserName%\Documents\Sagemcom\ZDUEParametrierTool
Two files are created - one in ASCII and one in HEX character format.

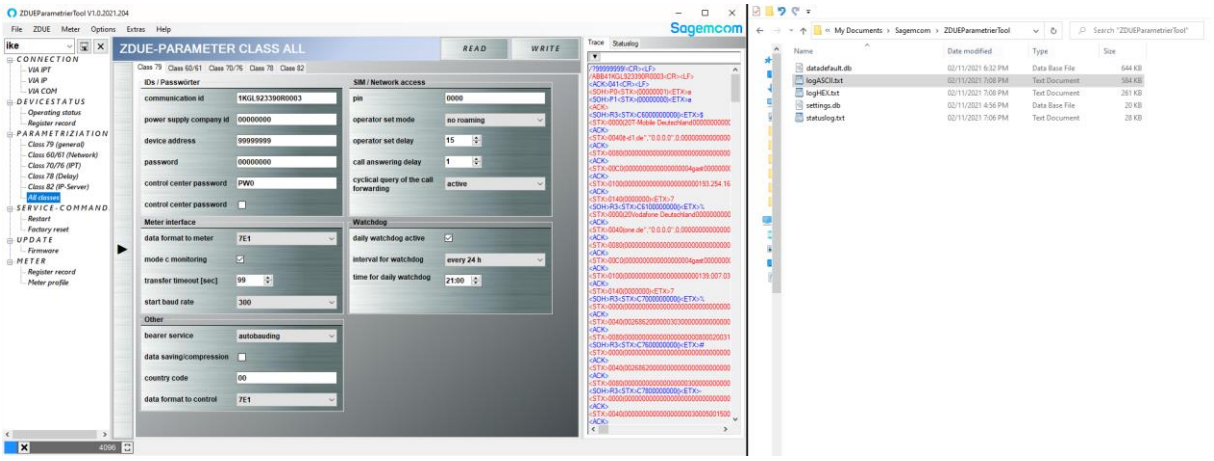


**Figure 27- Trace, Log Output to File**

## 5.11.2 Menu

This option can be used to show or hide the left tree view.

## 5.11.3 Automatic configuration

It is possible to save all views of the *CONNECTION*, *DEVICE STATUS* and *PARAMETER* sections as a separate configuration each with its own name. *Automatic configuration* must be deactivated for this. The saved configurations can be used like building blocks, which - combined in different ways - allow a quick creation of similar profiles (see also 4).
By default, the *Automatic configuration* function is active. In this mode, a profile corresponds exactly to the overall configuration of the ZDUE as it is currently available in all views of the ZDUE Parameterization Tool. It is not possible to reload individual configuration blocks.
For simplified handling it is recommended to leave this option enabled.

## 5.11.4 Automatically format values

If *Automatically format values* is activated, certain parameters are automatically supplemented during input (e.g. IP addresses are preceded by leading zeros). The number value in the extended menu item can be used to specify after how many seconds the automatic completion is carried out.
If *Automatically format values* is deactivated, no automatic completion takes place.

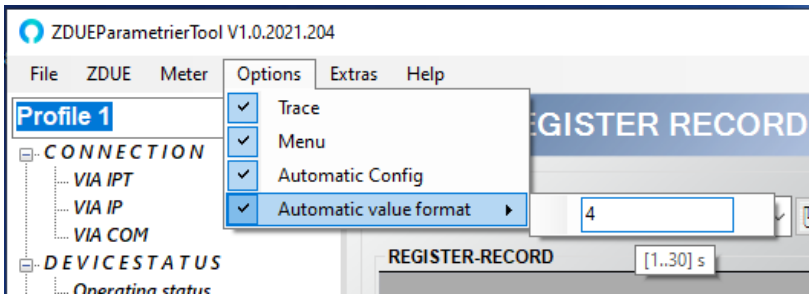


**Figure 28- Automatically Format Values**

## 5.12 Extras

The menu item Extras contains the language selection, as well as database selection.

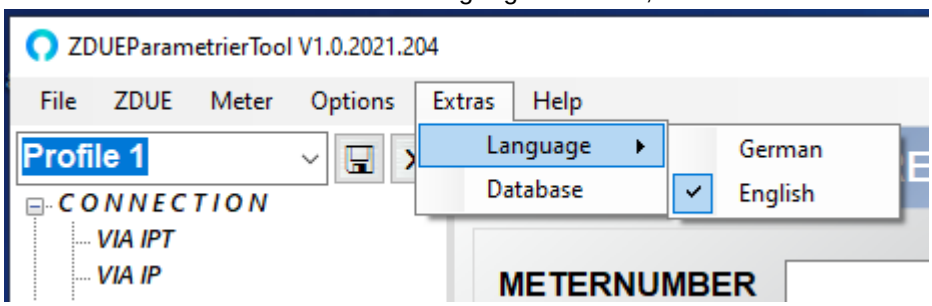


**Figure 29- Extras Menu Item**

### 5.12.1 Language

German and English are available for the language selection. When clicking on a language, all identifiers in the tool are translated into the respective language. This selection is saved so that the last selected language is automatically used the next time the tool is started.

### 5.12.2 Database

Settings and data storage of the ZDUEParametrizationTool are organized in databases. The *Database* menu item opens a dialog for managing these databases. The following operations are available:

- **Changing the currently used database:** Select the database to be used via the selection box and accept the setting with *OK.*
- **Create a new database:** Enter the name of the new database in the selection box, create the new database with the Save button and exit the dialog with *OK.*
- **Deleting an existing database:** Select the database to be deleted via the selection box, remove the database with the x button and exit the dialog with *OK.*

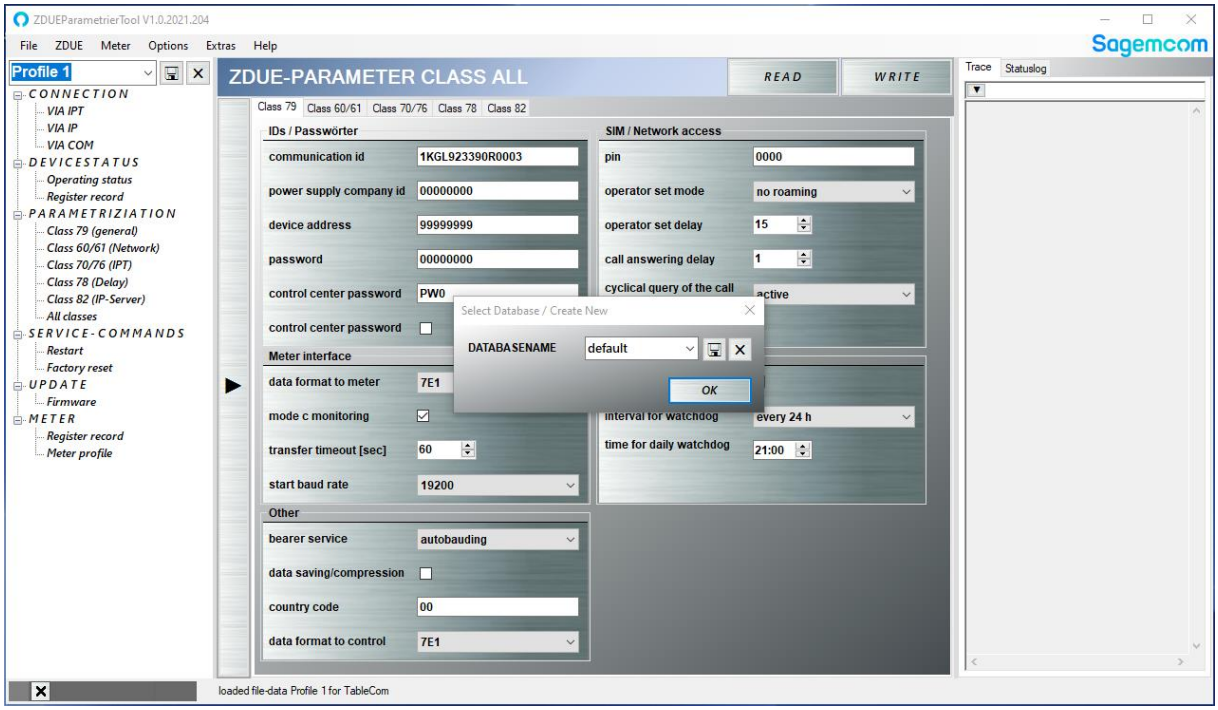


**Figure 30- Select Database / Create New**

## 5.13 Help

The Help menu item contains the application information (*App Info*) with version information and change log.

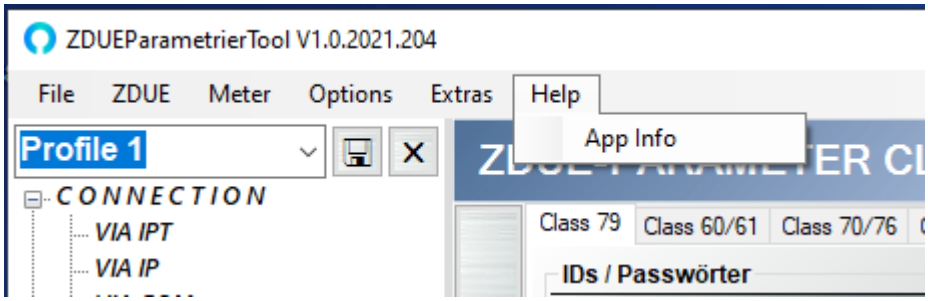


**Figure 31- Help Menu Item**