

PETROL PLUS SYSTEM CS MONITOR

***User's Guide
Version 6.0.3.0***

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1 INTRODUCTION

The "CS Monitor" software module (the *Module*) is designed for logging communication sessions between the "Communications Server" software module and a terminal.

This User's Guide provides a description of the structure and management of this *Module*.

The OC software module of the *System* is described in the document "*Petrol Plus. UG. OC*".

The main terms used in this User's Guide are described in the document "*Glossary of Petrol Plus System Terms*".

The structure and general principles of using the interface of the *Module* are described in the document "*Petrol Plus. UG. Basic principles of interface operations*".

1.1 Terms and Abbreviations

- BL** – black list
- CS** – Communications Server
- CSM** – Communications Server Monitor
- DB** – database
- OC** – operation centre
- RR** – remote recharge
- SMTP** – Simple Mail Transfer Protocol (the protocol used by the CS for sending messages)

2 GETTING STARTED

2.1 Starting the *Module*

The *Module* is started using the shortcut (see Fig. 1) on the workstation on which the Communications Server is installed. The *Module* can also be started automatically as a Windows service (see subsection 2.2.4, p. 24). The *Module* should be started before performing a collection for a terminal.



Fig. 1. Shortcut of the *Module*

After the *Module* is started, the icon of the *Module* will appear in the notification area of the taskbar (see Fig. 2):

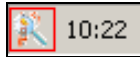


Fig. 2. CS Monitor icon

The *Module* menu can be opened by right-clicking on this icon (see Fig. 3). The *Module* menu contains the following items:

- "CSM settings" – *Module* settings (see subsection 2.2);
- "Exit" – exiting the *Module*.

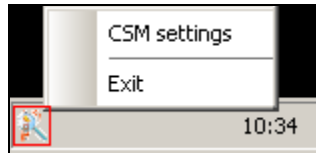


Fig. 3. *Module* menu opened from the notification area of the taskbar

2.2 Configuring the *Module*

To ensure correct functioning of the *Module*, configure the *Module* settings. To do that, select "CSM settings" in the menu shown in Fig. 3 or left-click on the *Module* icon in the notification area of the taskbar (see Fig. 2).

The "CS Monitor settings" window will appear (see Fig. 4).

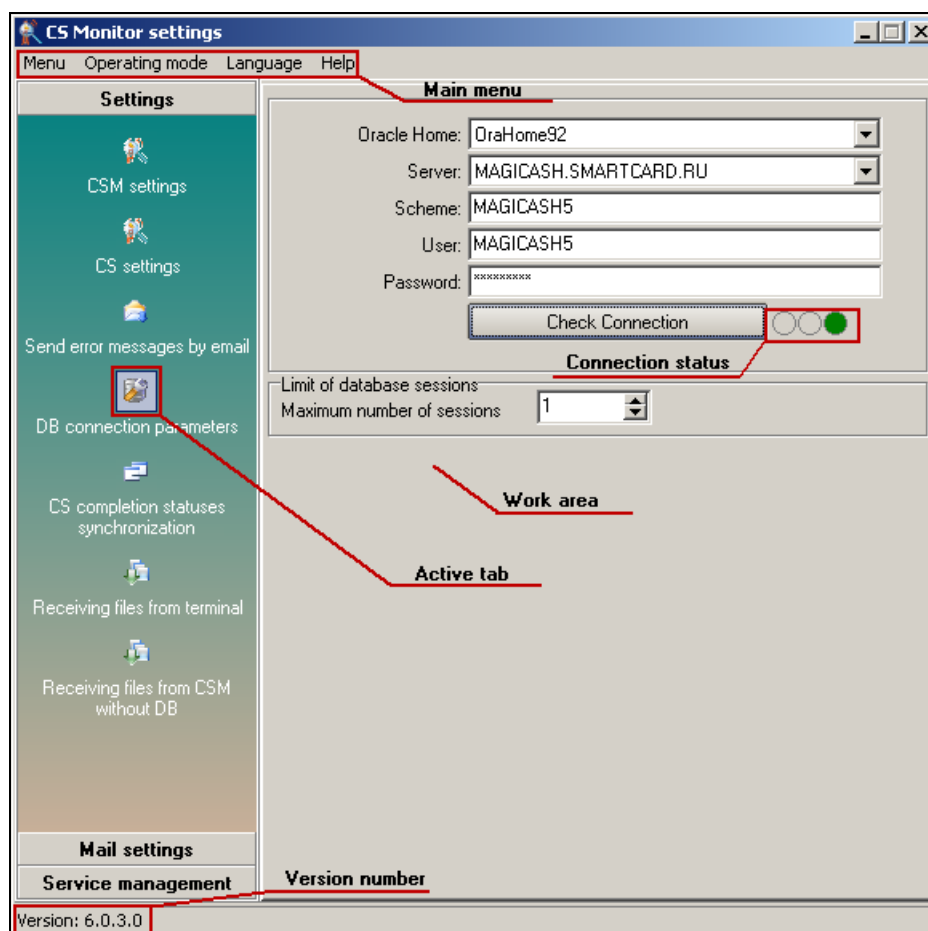


Fig. 4. "CS Monitor settings" window

The window contains the following elements:

- main menu (see Table 1);
- work area;
- tabs for switching between various *Module* settings:
 - in the "Settings" tab:
 - "CSM settings" – general *Module* settings: the folder for saving files in case of remote operation (without the database) and the level of detail for log files (see subsection 2.2.1.2, p. 10);
 - "CS settings" – settings for joint operation of the *Module* and the CS (see subsection 2.2.1.3, p. 10);
 - "Send error messages by email" – settings for sending messages by e-mail in case of errors during *Module* operation (see subsection 2.2.1.4, p. 12);
 - "DB connection parameters" – settings for connection to the OC database and the maximum number of simultaneously running sessions (see subsection 2.2.1, p. 9);
 - "CS completion statuses synchronization" – updating the error base of the *Module* in accordance with CS data (see subsection 2.2.1.4, p. 12);
 - "Receiving files from terminal" – settings for receiving files obtained as a result of a terminal collection session via the CS (see subsection 2.2.1.6, p. 15);
 - "Receiving files from CSM without DB" – specifying the folder for receiving files obtained during collection and starting the processing of these files (see subsection 2.2.1.7, p. 19);
 - in the "Mail settings" tab:
 - "SMTP settings" (see subsection 2.2.2, p. 21);
 - in the "Service management" tab:
 - "Service settings" – managing the *Module* installed as a Windows service (see subsection 2.2.4, p. 24)

The icon of the currently selected tab is displayed on a light background with a box around it, as shown in Fig. 4.

The version number of the *Module* is displayed in the status bar in the bottom of the window (see Fig. 4).

Table 1. Main menu of the *Module*

Item name	Keyboard shortcut	Description
The " Menu " item contains the following sub-items:		
"Save parameters"	Ctrl + S	Saving the specified settings
"Close"	Ctrl + Q	Closing the settings window without saving changes
The " Operating mode " item contains the following sub-items:		
"Remotely (Without DB)"		The <i>Module</i> operates without the database, saving collection information to a file (the IN files and OUT files are exchanged between the CS and the OC manually)
"Locally (With DB)"		The <i>Module</i> operates being connected to the database
The " Language " item contains the following sub-items, corresponding to the available interface languages. The set of available sub-items depends on the presence of the corresponding translation files. For example:		
"Русский"		Selecting the Russian interface language
"English"		Selecting the English interface language
"Castellano"		Selecting the Spanish interface language
"Francais"		Selecting the French interface language
The " Help " item contains the following sub-item:		
"About"	F1	Viewing reference information and information about latest software upgrades

2.2.1 "Settings" Tab

This subsection describes the general *Module* settings.

2.2.1.1 Database Connection Parameters

To connect to the database (in the "Locally (With DB)" operating mode), the connection settings should be configured in the **"DB connection parameters"** tab.

The following fields for configuring the connection settings are located in the work area of the **"DB connection parameters"** tab (see Fig. 5):

- "Oracle Home:" – selecting the Oracle Home;¹
- "Server:" – the name of the TNS service for connecting to the database server on which the *Module* objects are deployed. The list of available servers depends on the selected Oracle Home. When the Oracle Home is changed, the list of servers is updated, and the first server in the list becomes selected;
- "Scheme:" – the name of the database user owning the objects of the *Module*;
- "User:" – the user name for connecting to the database;
- "Password:" – the user password.

Fig. 5. Database connection parameters

To check all parameters, click **Check Connection**. If the connection is established successfully, the *"Connected successfully!"* message will be displayed, and the connection indicator will become green. Otherwise, a message informing about a connection error will be displayed (see Table 2).

Table 2. Connection errors

Error message	Error cause	User's actions
"Check the server name!"	An incorrect server name has been specified, or the server is unavailable	Check the connection settings and repeat the procedure for checking the connection
"Packet initialization error. Check the scheme!"	An incorrect schema name has been specified	
"Invalid password/login!"	An incorrect user name and/or password have been specified	

The "Limit of database sessions" field allows specifying the maximum number of simultaneously running connection sessions using the spinner control.

A separate session can be opened for each file to accelerate data processing. However, when separate sessions are used, a separate Oracle license should be purchased for each POS working with the *Module*. The optimal number of sessions can be specified using this parameter.

2.2.1.2 CSM Settings

This tab allows specifying the level of detail for operation log files, as well as the folder for saving files with information about collections performed without the database.

The level of detail is controlled with the "Extended logs" check box. If the check box is marked, detailed information about processing of transactions will be recorded in the log files. If the check box is unmarked, only the fact that the processing was performed will be recorded.

¹ An Oracle Home should be selected if the computer on which the *Module* is running has more than one Oracle Client installed.

The path to the folder for saving files can be specified only when the "Remotely (Without DB)" mode is selected (see subsection 2.2.1.7, p. 19).

2.2.1.3 CS Settings

To enable joint operation of the *Module* and the "Communications Server" software module, the settings used for these modules should be configured in the "**CS settings**" tab (see Fig. 6).

Fig. 6. CS settings

The following settings are configured in the work area of the "**CS settings**" tab, shown in Fig. 6:

- "CS folder" – the folder in which the CS is installed (the folder can be selected using the  button, located to the right of the "CS folder" field);
- "Class name" – the class of the window receiving messages from the CS (value – **TFMonitorCS²**);
- "Message (1)" – the number of an old format message, for operation with CS version 1.0.9.3 (recommended value – **1024**);
- "Message (2)" – the number of a new format message, for operation with CS version 1.1.1.0 or later (recommended value – **1025**);
- "Work with CS monitor" – if this check box is marked, messages from the CS are processed. Otherwise, the messages are not processed.

Note.

These settings for joint operation of the CS and the *Module* are stored either in the `csconfig.ini` file or in the `xchnhpp.ini` file. First, look for the settings in the `csconfig.ini` file. If they are not there, look in the `xchnhpp.ini` file (see the document "*Petrol Plus. AG. CS*").

² "Class name" is an unchangeable parameter.

2.2.1.4 Sending Error Messages by E-mail

To configure the settings for sending messages by e-mail, go to the "Send error messages by email" tab. The work area of this tab contains the following fields (see Fig. 7):

Fig. 7. Configuring e-mail settings

- the "Send e-mail in case of" group – selecting the events for which automatic e-mail messages should be sent:
 - "Absence of the terminal in the database" – if this check box is marked, then if the terminal from which the IN file has been received is absent from the list of terminals in the OC, an error message with the following text will be sent: *"Own terminal check error!"*. The message will also include the full name of the IN file that caused the error;
 - "Incorrect certificate check result" – if this check box is marked, then if errors are detected when checking the certificated of IN and SRT files, an error message with the following text will be sent: *"Certificate check error! File: <name of the IN file that caused the error>"*;
 - "Unsuccessful collection" – if this check box is marked, then if a collection is unsuccessful, an error message with the following text will be sent: *"Collection error"*. This happens, for example, when a TRM file or an IN file has not been found, or a network, database server, or *Module* failure occurred during the collection;
 - "Modem failures" – if this check box is marked, the log file will be automatically sent by e-mail in case of a modem failure. The functionality of sending log files is described in more detail below (see the description of the "Intervals" fields);

The following parameters are available only if the "Modem failures" check box is marked. These parameters are applied only to sending log files:

- "Intervals":
 - "Send mail in" – the time interval (by default: 60 seconds; minimum allowed interval: 1 second; maximum allowed interval: 100000 seconds) after which the log file sending is repeated in case of a modem failure. When a terminal collection error occurs for the first time, the corresponding log file containing a description of the error is generated, placed to the folder for outgoing mail, and automatically sent by e-mail. After each subsequent consecutive unsuccessful collection attempt for the same terminal, information about the error is added to the existing log file for this terminal. The error types can be identical or different. After the specified time interval (when the timer goes off), another e-mail message is created. All log files from the folder for outgoing mail are attached to this message in an archive (all log files for all terminals are included; the name of the archive is the same as the name of the first (chronologically) log file). Immediately after this, all log files that have been sent are deleted. If the collection error occurs again, another log file is created, but this log file will be sent only when the timer goes off again or when a collection attempt is successful. If the collection is successfully performed during the period between the timer actions, a new additional log file will be created with information about the error correction. The log file with errors and the "success" log file are then automatically sent by

e-mail. After that, both files are deleted from the folder for outgoing mail. After a successful collection performed for any terminal, the "error timer" is stopped. The timer is also stopped when the user exits the *Module*;

- "If error occurs check connection in" – the time interval (by default: 30 seconds; minimum allowed interval: 1 second; maximum allowed interval: 100000 seconds), after which an attempt to resend the mail is repeated in case of loss of connection to the outgoing mail server or mail sending errors. Attempts will be performed until the sending is successful or until the *Module* is closed. If the *Module* is closed before the connection to the outgoing mail server is restored, then attempts to re-establish the connection will be continued when the *Module* is started again. After the connection to the outgoing mail server is restored, all existing unsent log files will be sent;
- "Outgoing mail folder" – the folder for saving log files. When the *Module* is first started, this field will contain the following path: <Module installation folder>\LOG_OUT. If this value is not changed, then the LOG_OUT subfolder will be created in the *Module* installation folder, and the *Module* will use this subfolder for log files. Otherwise, another folder for saving log files can be selected using the  button located to the right of the "Outgoing mail folder" field. If the *Module* does not find the folder for saving log files, the folder will be created using the path specified in the "Outgoing mail folder" field;
- "Message text" – the text for messages that will be generated. By default, no text is specified.

Note.

The "Message text" field is not mandatory and can be left blank.

The name of a log file containing information about errors is generated according to the following format:

YYYYMMDD_hhmiss_CSFail_IssuerID_TerminalID.log, where:

- YYYY – the year of creation of the log file;
- MM – the month of creation of the log file;
- DD – the day of creation of the log file;
- hh – the hour of creation of the log file, in the 24-hour format;
- mi – the minute of creation of the log file;
- ss – the second of creation of the log file;
- CSFail – the constant part of the log file name;
- IssuerID – the number of the terminal issuer (the number should contain four digits; if necessary, leading zeroes are added to it, for example: "0014");
- TerminalID – the terminal number (the number should contain six digits; if necessary, leading zeroes are added to it, for example: "000042").

Example:

20061212_125225_CSFail_4000_000012.log

An example of an error log file is shown below (see Fig. 8):

```
|-----<<<ERROR LOG>>>-----|
LocalStart      | 18.05.2006 11:30:54
ComPortNumber   | COM1
IssuerID        | 4000
TerminalId      | 6
RequestsCounter | 2
SessionStatus   | 261
|-----<<<ERROR LOG>>>-----|
```

Fig. 8. Example of an error log file

The following information is recorded in the fields of the log file:

- "LocalStart" – the date and time when the collection session was started;
- "ComPortNumber" – the COM port used for the collection;
- "IssuerID" – the terminal issuer number;
- "TerminalID" – the terminal number;
- "RequestsCounter" – the total number of requests in the exchange between the CS and the terminal until the connection was lost;

- "SessionStatus" – the completion status of the collection session. This field may contain the following values:
 - "261" – error receiving/sending data during modem initialization for outgoing calls;
 - "262" – error receiving/sending data during modem initialization for incoming calls.

The log file containing information about the error disappearance is similar to the error log file except for the <<<SUCCESS LOG>>> header, the constant part of the log file name ("CSSucc"), and the "0" value in the "SessionStatus" line (see Fig. 9).

Example: 20061212_125523_CSSucc_4000_000012.log

-----<<<SUCCESS LOG>>>-----	
LocalStart	18.05.2006 11:55:30
ComPortNumber	COM1
IssuerID	4000
TerminalId	6
RequestsCounter	2
SessionStatus	0

Fig. 9. Example of a log file containing information about the error disappearance

Log files are generated during data collection. Log files are sent by e-mail in accordance with the time intervals specified in the **"Send error messages by email"** tab (see subsection 2.2.1.4, p. 12). When the timer goes off, all log files found in the folder for outgoing mail are compressed into a *.zip archive. The name of the archive is the same as the name of the first (chronologically) log file. Then the original log files are deleted, and the archive is sent by e-mail. After the archive with the log files is successfully sent, it is also deleted.

The archive is not deleted if it cannot be sent due to any cause. In this case, the archive is saved until the sending timer goes off again. Any newly generated log files are not added to the existing archive. These new log files are compressed into another archive when the sending timer goes off. When the connection is restored, all accumulated archives with log files will be sent in one e-mail message.

Note.

The e-mail settings are not mandatory. If these settings are not configured, then if a modem failure occurs, the log file will be saved to the folder specified in the "Outgoing mail folder" field (see Fig. 7, p. 12). This log file will not be sent by e-mail.

2.2.1.5 Synchronizing CS Completion Statuses

The **"CS completion statuses synchronization"** tab (see Fig. 10) allows updating the data in the error base of the CSM database in accordance with the data contained in the synchronization file (SessionStatus.txt), which is included in the CS distribution package starting from version 1.1.1.0. The synchronization file contains details for the completion statuses of data collection sessions. These statuses are used for the "Collection on terminals" report (see the document "Petrol Plus. UG. OC Reports (supplement on Reports on collection (CSM))").

Note.

It is recommended to perform the synchronization after each CS software upgrade to a new version.

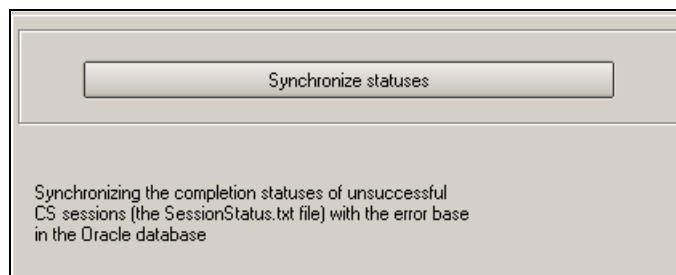


Fig. 10. Synchronizing CS completion statuses

To perform the synchronization, click **Synchronize statuses**.

If the synchronization is successful, the following message will be displayed: "*Synchronization completed successfully!*". Otherwise, a message about a synchronization error will be displayed (see Table 3).

Table 3. Synchronization errors

Error message	Error cause	User's actions
"Synchronization file not found!"	The <code>SessionStatus.txt</code> file is not present in the CS configuration folder	Check the presence of the <code>SessionStatus.txt</code> file in the CS configuration folder, then repeat the synchronization procedure
"Incorrect synchronization file format!"	The <code>SessionStatus.txt</code> file does not correspond to the required format	If this error occurs, send the <code>SessionStatus.txt</code> file to the Technical Support Department, using the address specified on page 27

2.2.1.6 Receiving Files from a Terminal

This functionality allows receiving files obtained during a terminal collection session using the CS, and placing the transactions contained in the received files into the reception file and the repository for their further processing by the OC module. The reception of each new group of files is started immediately after they are received from the CS and is performed simultaneously with the files already being received. Thus, in case of a large stream of incoming data, parallel processing is performed, which significantly reduces the reception time.

The *Module* performs reception for the following two types of files:

- TRM file, containing the information about the terminal;
- IN file, containing transactions.

Each type of files is received separately, and the reception does not depend on whether the corresponding file of the other type obtained during data collection is already received from the terminal.

The reception is performed in two modes: the online mode and the forced mode. The [online mode](#) (see subsection 2.2.1.6.4.2, p. 19) allows receiving files automatically in the course of a data collection session performed using the CS with the *Module* running. The forced mode allows receiving files obtained in the course of a data collection session performed using the CS with the *Module* not running, as well as handling errors occurred during file reception. Before files are received, the *Module* searches for them in the specified folder (see [forced mode](#), p. 18).

Before starting to receive the files, the *Module* performs a number of checks. The main checks are the following:

- checking the origin of the file to be received. The *Module* checks whether the file is obtained during a collection of a terminal of the own issuer. The issuer number in the name of a TRM file should correspond to the number of the own issuer, and the terminal number should correspond to a terminal number from the list of terminals of the own issuer stored in the OC database;
- checking the certificate. This check is performed before receiving an IN file containing transactions to determine whether the data in the file are correct.

If you need e-mail notifications about unsuccessful checks, the notification service of the *Module* allows setting up such notifications (see subsection 2.2.1.4, p. 12).

Transactions can be received either in the *Module* or in the OC. To avoid errors and incorrect reception, the *Module* has the functionality of automatically preventing simultaneous reception of transactions. The specifics of joint operation of the OC and the *Module* related to receiving/processing transactions are listed below:

- when transactions are received in the *Module*, simultaneous reception of transactions in the OC is disabled (including reception with automatic processing);
- when transactions are received in the *Module*, simultaneous processing (without reception) of transactions in the OC is enabled;
- when transactions are received in the OC, simultaneous reception of transactions in the *Module* is disabled;
- when transactions are processed in the OC, simultaneous reception of transactions in the *Module* is enabled.

If transactions cannot be received due to simultaneous reception in the OC, the corresponding message is recorded in the log file of the *Module*.

Likewise, when several CSM modules (two or more) operate simultaneously, reception of transactions is similarly disabled. In this case, transactions can be received exclusively in the OC, or CSM(1), or CSM(2), etc. When several modules start the operation of transaction reception simultaneously, the reception will be performed by the module that started the operation first.

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2.2.1.6.1 Processing TRM Files

When a TRM file is processed, the following information about the terminal is updated in the OC database based on the TRM file data:

- the type of the terminal;
- the ID of the terminal software;
- the version of the terminal software;
- the date and time of the terminal software version build;
- the amount of free memory space;
- the serial number of the terminal;
- the collection history – to view the collection history, click on the **Collection history** button in the **"Data"** tab for the terminal in the OC;
- the date of the last collection (without time) – this date is displayed below the list of terminals in the OC;

Note.

The date and time of the terminal collection (in the collection history) and the date of the last collection are updated both when receiving TRM files and when receiving IN files.

- the current and the maximum amounts of memory allocated for RCs and the BL – these amounts are displayed in the **"Data"** tab for the terminal in the OC;
- the amount of free space (in percent): total, allocated for RCs, allocated for the BL – these values are displayed in the **"Data"** tab for the terminal in the OC;
- the pool numbers for RCs and the BL – these numbers, together with the amounts of occupied and free memory, allow determining whether there is a shortage of terminal memory. If the amounts of free terminal memory for loading the BL and/or RCs reach the specified critical values, the record of the terminal will be shown in the list in white on a red background (see the document *"Petrol Plus. UG. OC (supplement on remote collection)"*);
- the information indicating whether the terminal supports the FBL. This information is not transmitted in the TRM file itself. If a TRM file has been received from the terminal, this already unambiguously indicates that the terminal supports the FBL. In the terminal list in the OC, the numbers of such terminals are shown in italics.

The serial number of the terminal is used in the "Reports on collection (CSM)" module (see the document *"Petrol Plus. UG. OC Reports (supplement on Reports on collection (CSM))"*).

Note.

The codograms created by the *Module* to transmit collection information to the ROC and/or DPC are generated both for the TRM file and the IN file. If both files have been successfully received from the terminal and processed, only one codogram is generated.

2.2.1.6.2 Receiving IN Files

Before an IN file is received, the validity of data in the IN file is checked based on the received certificate. If the check shows that the data are invalid, the IN file is not processed.

If the check is successful, the transaction information is recorded into the OC database, the date of the last collection of the terminal is updated, a record is added to the collection history, and codograms for sending to the ROC and/or DPC are created (see subsection 2.2.1.6.1).

The received IN file is renamed into a file with the *.bak extension.

2.2.1.6.3 Failure Management

If a *Module* failure occurs during reception of IN files, the failure management procedure is performed. The IN and SRT files that were being received when the failure occurred are placed to a subfolder (the *Error storage folder*) with the path depending on the reception method:

- in the online mode – <Module installation folder>\Errors\YYYYMMDDHHMISS;
- in the forced reception mode – <Module installation folder>\Errors\Force\YYYYMMDDHHMISS, where:
 - YYYY – year of the event;
 - MM – month of the event;
 - DD – day of the event;
 - HH – hour of the event in the 24-hour format;
 - MI – minute of the event;
 - SS – second of the event.

Note.

For the online mode, the event is the moment of performing the collection. For the forced reception mode, the event is the moment of starting the processing of the files selected for reception.

In the same folder, a file with the same name as the IN file and the *.err extension is created (the *ERR file*). The numbers of the transaction lines of the IN file that were being processed when the failure occurred are recorded to this ERR file. When the *Module* is next started, it checks whether the IN file is present, then whether the corresponding ERR file is present in the error storage folder. After that, based on the data in the ERR file, the *Module* performs another attempt to receive those transactions from the IN file that were being received when the failure occurred. If the reception using the ERR file is successful, the IN file will be renamed into a file with the *.bak extension, and the SRT and ERR files will be deleted.

If a failure occurs during the second reception attempt, then the ERR file is deleted and a new error storage folder is created (see above). The IN and SRT files are then placed into this folder. The number of the transaction that caused the failure is recorded into a file with the *.err2 extension (the *ERR2 file*), which is also saved in the error storage folder (the format of this file is similar to the format of the ERR file). If a reception attempt using the ERR2 file is successful, the IN file will be renamed into a file with the *.bak extension, and the SRT and ERR2 files will be deleted. If failures occur during subsequent reception attempts, the same scheme of processing with creation of a new ERR2 file is applied.

When the *Module* is next started, automatic reception of transactions from an IN file based on an ERR2 file is not performed, in contrast to reception based on an ERR file. The reception of these transactions can only be performed in the forced mode.

ATTENTION!

If there are any ERR2 files in the error storage folder, they should be processed in the forced mode (see subsection 2.2.1.6.4.1). ERR files are processed automatically when the *Module* is started, but they can also be processed in the forced mode, by selecting the corresponding radio button in the "Process / Error files" group in the **"Settings / Receiving files from terminal"** tab (see subsection 2.2.1.6.4.1).

If, when working in the online mode, the *Module* cannot connect to the database during collection (for example, because the database connection parameters are incorrect, or the database server is not responding, or an internal database error has occurred, etc.), then the NotSaving.smm text file will be created in the *Module* root folder, and the information received from the CS during the collection will be written to this file. If the file already exists, new information will be added to it (without the file being recreated, i.e., all old information will remain unchanged in the file). Each record in the file has the following format:

<Date of receiving the message from CS> | <CS data structure> | <Error message>

An example of the NotSaving.smm file is shown in Fig. 11.

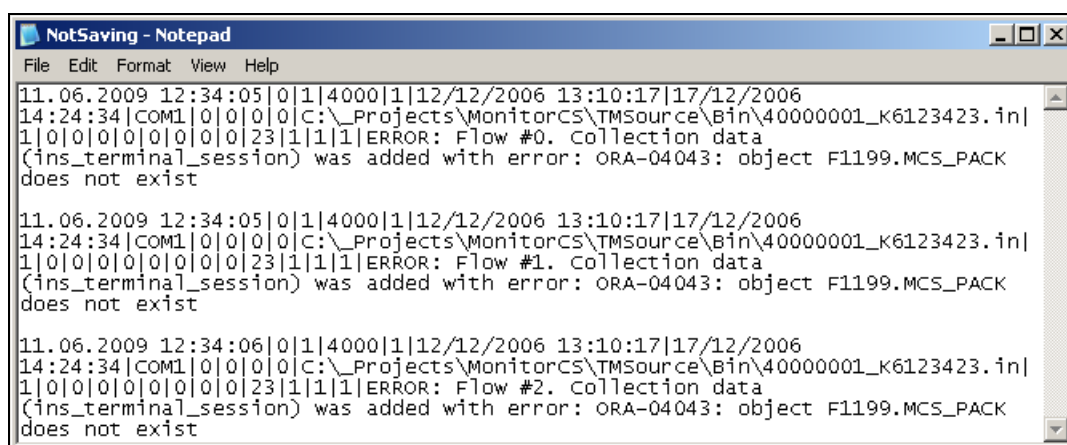


Fig. 11. Example of the NotSaving.smm file

After the NotSaving.smm file is saved, the following message will be added to the log file: "Saving the message received from CS to file <full path to the NotSaving.smm file>".

Note.

If database connection errors occur and the `NotSaving.smm` file is created in the *Module* root folder, it is recommended to send this file to the Technical Support Department.

If failures occur in the course of receiving files, the notification service can generate the corresponding error messages and send them by e-mail. Configuring the notification parameters and selecting the types of failures for which notifications should be sent is performed in the **"Settings / Send error messages by email"** tab (see subsection 2.2.1.4, p. 12).

Information about the process of receiving each file is recorded in the log. The path to the log file is specified in the bottom of the **"Receiving files from terminal"** tab shown in Fig. 12.

2.2.1.6.4 Configuring Reception of Files from a Terminal

2.2.1.6.4.1 Configuring Forced Reception

Configuring the parameters for receiving IN files and processing TRM files in the forced mode is performed in the **"Receiving files from terminal"** tab (see Fig. 12).

Fig. 12. Configuring file reception from terminals

The path to the folder in which the *Module* looks for files to process is specified in the "File processing folder:" field. To select the file processing folder, click on the button located to the right of the "File processing folder:" field.

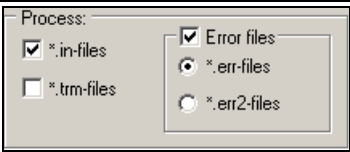
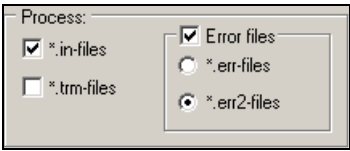
The check boxes in the "Process:" group allow defining the types of files and rules for processing:

- `"*.in-files"` – files with transactions;
- `"*.trm-files"` – files with information about terminals;
- "Error files" – error files of the selected type.

The *Module* searches for IN files after you click on the **Receive files** button. In the **"Files for processing"** window that appears, select the files that should be processed (by default, all files are selected) and click **Process**. Rules for processing the selected IN files depend on which check boxes are marked in the "Process:" group (see Fig. 12) and are described in Table 4.

Table 4. File reception rules

Statuses of the check boxes	Files to be received	Detailed description
	Normal mode. All marked IN files will be received	If an ERR file or an ERR2 file is found for a selected IN file, this error file will be processed (since the "Error files" check box is unmarked, it does not matter which radio button is selected, <code>"*.err-files"</code> or <code>"*.err2-files"</code>). If errors occur during processing of transactions from the IN file, an ERR file will be created in accordance with the algorithm described in subsection 2.2.1.6.3 (p. 16). To process the new ERR/ERR2 files, the reception of the IN files that caused the failure should be started again

Statuses of the check boxes	Files to be received	Detailed description
	Mode for processing errors occurred during reception of IN files. Out of the selected IN files, only those files will be received for which the corresponding ERR file exists	The processing of the ERR files corresponding to the selected IN files will begin. If the ERR file is not found for an IN file, the following error message will be recorded to the log file: "Cannot open file <path to the ERR file>". If the corresponding ERR file is found for an IN file, the processing of this ERR file will begin. If errors occur during processing of the ERR file, an ERR2 file will be created in accordance with the algorithm described in subsection 2.2.1.6.3 (p. 16)
	Mode for processing errors occurred during repeated reception of IN files. Out of the selected IN files, only those files will be received for which the corresponding ERR2 file exists	The processing of the ERR2 files corresponding to the selected IN files will begin. If the ERR2 file is not found for an IN file, the following error message will be recorded to the log file: "Cannot open file <path to the ERR2 file>". If the corresponding ERR2 file is found for an IN file, the processing of this ERR2 file will begin. If errors occur during processing of the ERR2 file, a new ERR2 file will be created in accordance with the algorithm described in subsection 2.2.1.6.3 (p. 16)

Notes:

1. Either IN files, or TRM files, or both types of files should be marked for processing. The "*.in-files" check box can only be unmarked when the "*.trm-files" check box is marked, and vice versa.
2. The "*.err-files" and "*.err2-files" radio buttons are available only if the "*.in-files" and "Error files" check boxes are marked. These radio buttons are mutually exclusive.

When you click on the **Receive files** button, the following confirmation request will be displayed: "Do you want to process files in folder <Name of the folder for file processing>?".

To confirm processing of the files, click **OK**. To cancel, click **Cancel**. If files for processing are found in the specified folder, the list of files with check boxes will be displayed (see Fig. 13). To select files for processing, mark their check boxes in the list. To start processing of the selected files, click **Process**. To cancel, click **Cancel**.

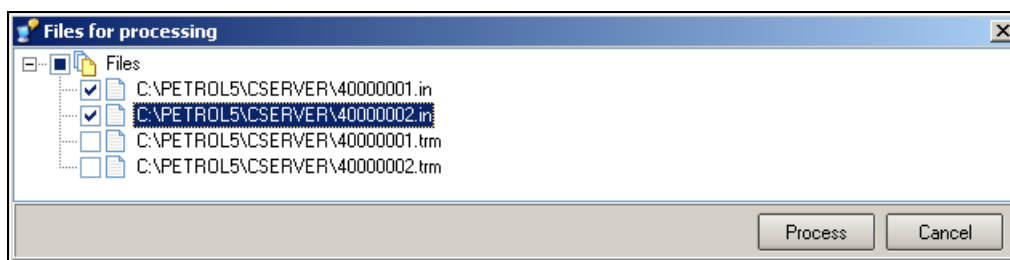


Fig. 13. List of files for processing

If no files for processing are found, the corresponding message will be displayed.

2.2.1.6.4.2 Configuring the Online Mode

The online mode consists in automatic reception of files in the course of a data collection session performed using the CS with the *Module* running. The online mode can be enabled/disabled by marking/unmarking the "Receive files from terminal" check box. This check box is located in the "On-line reception" section of the **"Receiving files from terminal"** tab (see Fig. 12).

2.2.1.7 Operation Without the Database

The *Module* allows operating without the OC database and Oracle software. When this scheme of operation is used, information about performed collection sessions is saved into archives (*.zip files) and can be later received and loaded into the database using the *Module* operating with the database (either the same *Module* with changed settings, or a similar one with the local scheme of operation).

The names of the archive files are generated according to the following principle:

XXXXXXXX_YYYYMMDDHH24MISS.zip,

where:

- XXXXXXXX – the first 4 digits are the issuer number, the last 4 digits are the terminal number. Leading zeroes are added to numbers containing less than 4 digits;
- YYYYMMDDHHMISS – the full date:
 - YYYY – the year of the collection session;
 - MM – the month of the collection session (two-digit number from 01 to 12);
 - DD – the day of the collection session (two-digit number from 01 to 31);
 - HH24 – the hour of the collection session (two-digit number from 00 to 23);
 - MI – the minute of the collection session (two-digit number from 00 to 59);
 - SS – the second of the collection session (two-digit number from 00 to 59).

For example, 40000001_20090415121703.zip.

2.2.1.7.1 Enabling the Remote (Offline) Mode

The mode of *Module* operation without the database should be set up on workstations with the installed CS but without access to the OC database.

To enable this mode, select the "**Operating mode / Remotely (Without DB)**" item in the main menu of the *Module* (see Fig. 14). After that, the "File saving folder:" field will become available in the "**Settings / CSM settings**" tab. This field allows specifying the path to the folder for storing archives with information about collection sessions. By default, the LocalCollection folder is used. This folder is located in the *Module* installation folder (e.g., C:\PETROL5\CSERVER\LocalCollection).

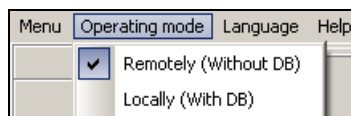


Fig. 14. Enabling the mode of *Module* operation without the database

Archive files containing collection data are sent to a workstation with the *Module* installed and with connection to the OC database.

Note.

If the mode of operation without the database is selected, only the following items will be available in the *Module* settings: "**CSM settings**" (see subsection 2.2.1.2, p. 10), "**CS settings**" (see subsection 2.2.1.3, p. 11), and "**Send error messages by email**" (see subsection 2.2.1.4, p. 12). The contents of the "**Mail settings**" tab (see subsection 2.2.2, p. 21) and the "**Service management**" tab (see subsection 2.2.4, p. 24) will remain unchanged.

2.2.1.7.2 Processing Files Received from an Offline Workstation

When archive files with information about collection sessions are received on a computer with the CS having access to the database, these files should be placed into the file processing folder. The path to this folder is specified in the "File processing folder:" field of the "**Settings / Receiving files from CSM without DB**" tab. By default, the following folder is used: <Module installation fold>\LocalCollection.

To start the processing, click **Process files** (see Fig. 15).

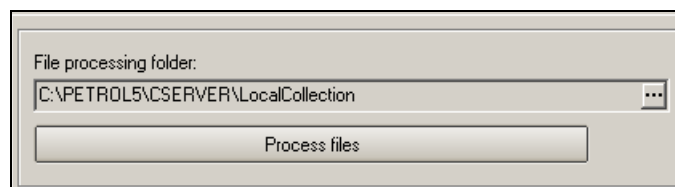


Fig. 15. Receiving files from a CSM without database

The following confirmation request will be displayed: "Do you want to process files in folder <File_processing_folder>?".

To confirm processing of the files, click **OK**. To cancel, click **Cancel**. If files for processing are found in the specified folder, the list of files with check boxes will be displayed (see Fig. 16). To select files for processing, mark their check boxes in the list. To start processing of the selected files, click **Process**. To cancel, click **Cancel**.

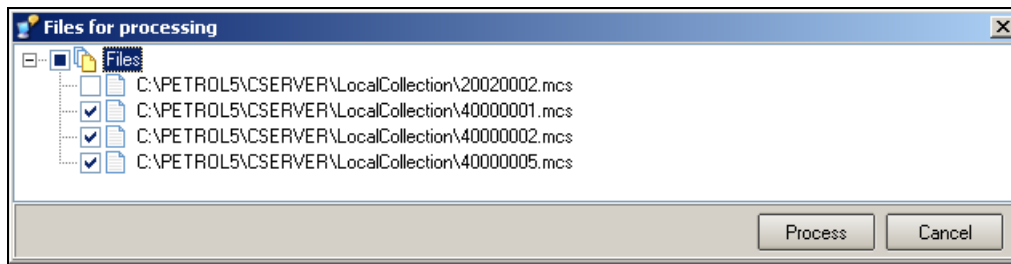


Fig. 16. List of files for processing

If no files for processing are found, the corresponding message will be displayed.

2.2.2 Configuring E-mail Settings

In order to ensure the possibility to set up automatic sending by e-mail for the log file (in case of modem failure), as well as for error messages (in case of errors during collection), parameters of the outgoing mail server should be configured in the **"Mail settings / SMTP settings"** tab of the **"CS Monitor settings"** window. The work area of the **"Mail settings"** tab (see Fig. 17) contains the following fields for specifying the configuration parameters:

SMTP

Outgoing mail server: mail.company.com

Port: 25

☒ Use authentication

User: smith

Password: [masked]

Connection test

Mail

Company: Company Ltd.

Sender: CS Monitor

To: addressee@address.com

From: MonitorCS@company.com

Subject: CS Monitor

Fig. 17. Configuring e-mail settings

- "SMTP" – settings for the outgoing mail server:
 - "Outgoing mail server" – the IP address or the domain name of the mail server;
 - "Port" – the port number, "25" by default;
 - the necessity of marking the "Use authentication" check box depends on the software settings of the outgoing mail server. If the check box is marked, the following fields will become available:
 - "User" – user's name;
 - "Password" – user's password.

Note.

If the outgoing mail server uses authentication, the "User" and "Password" fields are mandatory.

To check whether the connection parameters for the outgoing mail server are correct, click **Connection test**. If a connection is established successfully, the following message will be displayed: *"Connected successfully!"*. Otherwise, an error message will be displayed;

- "Mail" – mail settings:
 - "Company" – the company name of the message sender. This value will be displayed in the "Company" field of the message header;
 - "Sender" – the name of the message sender. This value will be displayed in the "Sender" field of the message header;
 - "To" – the e-mail address of the message recipient;
 - "From" – the e-mail address of the message sender;
 - "Subject" – the subject for messages.

Notes:

1. The "Company", "Sender", and "Subject" fields in the e-mail settings are not mandatory and may be left blank.
2. The displaying of the "Company" field in the message header depends on the e-mail client being used. Many e-mail clients do not display this field.

2.2.3 Recording of Information About Transaction Reception Using CSM

Information about reception of transactions in the OC using CSM is recorded in the event log (see Fig. 18), which can be accessed by selecting **"System / Event log / Complete"** in the OC software module (see the document *"Petrol Plus. UG. OC"*).

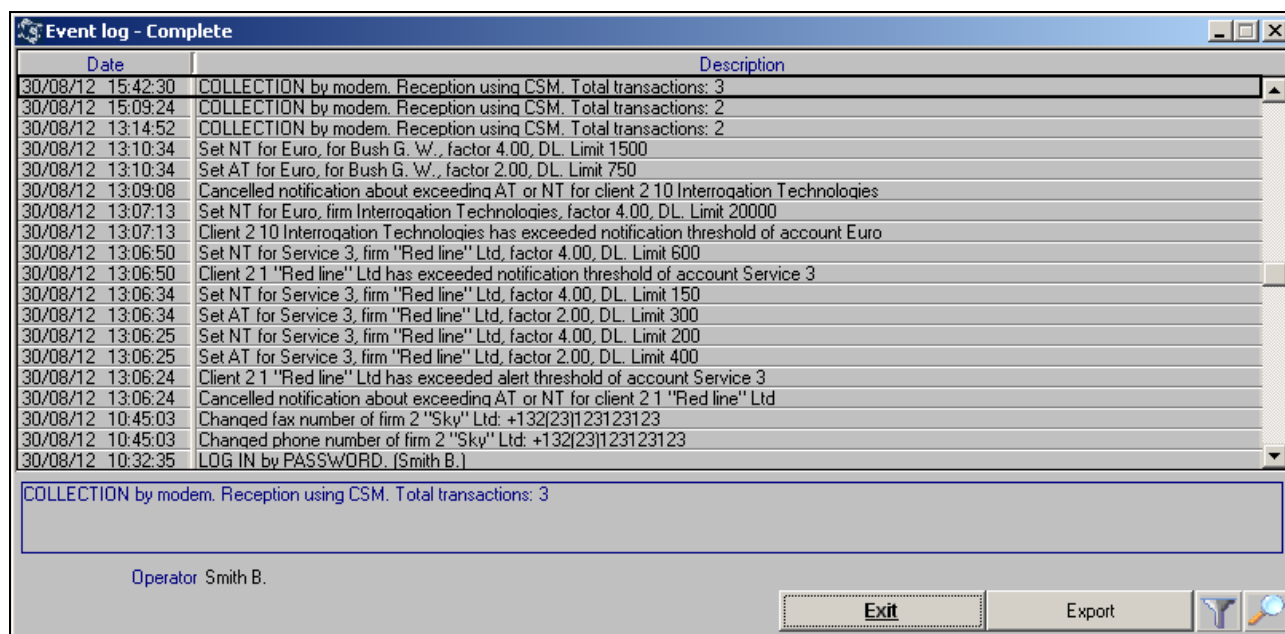


Fig. 18. Event log

The following messages about reception of transactions in the OC using CSM can be displayed in the event log:

- "COLLECTION by modem. Reception using CSM. Total transactions: <total number of received transactions>;
- "COLLECTION by modem. Reception using CSM. Total transactions: <total number of processed transactions>. With errors: <number of transactions with errors>;
- "Receiving transactions using CSM. Processing errors. Total transactions: <total number of processed transactions or transactions processed earlier with errors>;
- "Receiving transactions using CSM. Processing errors. Total transactions: <total number of processed transactions or transactions processed earlier with errors>. With errors: <total number of transactions for which errors occurred again>".

In case of failures during transaction reception, information about these failures is recorded in the "Administrative event log" of the OC software module (see Fig. 19). This log can be accessed by selecting "System / Event log / Administrator" in the OC main menu (see the document "Petrol Plus. UG. OC").

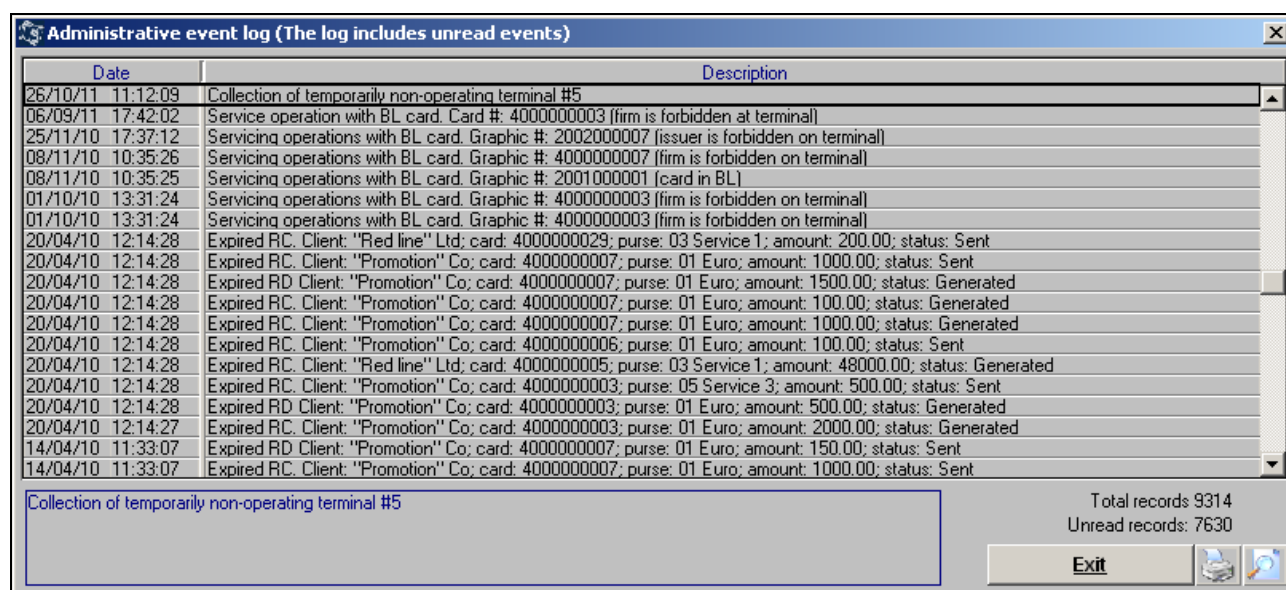


Fig. 19. Administrative event log

The following messages about failures during transaction reception can be displayed in the event log (see Table 5)

Table 5. List of possible error messages and troubleshooting methods

Error message	Error cause	Troubleshooting
Collection of temporarily non-operating terminal #<terminal number>	The terminal specified in the error message has the "Temporarily inactive" status in the OC software module	Change the status of the terminal
Errors occurred while receiving the transaction. Transaction: <IN file line with the transaction that caused the error>	Error processing the transaction on the server	If such error occurs, the following message will be recorded in the log file: "Exception while receiving transactions (ins_transaction). SQLCODE = <code> SQLTEXT = <error text>". The cause of the error can be determined by the contents of the "SQLTEXT" field. If you cannot eliminate the error, contact the Technical Support Department
Errors occurred while receiving the transaction. Transaction: <IN file line with the transaction that caused the error>. Error code: <error code>	After processing in the OC, the transaction has been placed into the repository for rejected transactions with the error code specified	Error codes and troubleshooting methods for them are described in the document "Petrol Plus. UG. OC"

For transactions received in the OC from terminals using CSM, "From CSM" is displayed in the "Source" field in transaction viewing windows (see example shown in Fig. 20).

Date		Serv. purse	Payment purse		Card	Operator	Type
28/05/07	14:59:30	128.00	10 0.00	1	0000000000	4000000010	Shift
28/05/07	14:59:22	60.00	1 60.00	1	4000000005	4000000010	Card credit
28/05/07	14:59:21	60.00	1 60.00	1	4000000005	4000000010	Card credit
28/05/07	14:59:15	50.00	1 50.00	1	4000000006	4000000010	Card debit
28/05/07	14:59:11	8.00	0 0.00	1	0000000000	4000000010	Shift
17/05/07	17:08:04	1,100,001.00	1 1,100,001.00	1	4000000028	4000000005	RC
17/05/07	17:06:22	1,000,001.00	1 1,000,001.00	1	4000000028	4000000005	RC
17/05/07	17:06:20	900,001.00	1 900,001.00	1	4000000028	4000000005	RC
23/03/07	15:03:45	1.00	1 1.00	1	4000000028	4000000102	Card debit
23/03/07	15:00:57	1.00	1 1.00	1	4000000028	4000000102	Card debit
23/03/07	14:59:11	1.00	1 1.00	1	4000000028	4000000102	Card debit

Source From CSM

Total 751

Exit

Legend:
 ///--> credit
 ///--> debit
 ---> Online
 ---> extended format

Fig. 20. Window for viewing transactions from a terminal

2.2.4 Working with the *Module* in the Windows Service Mode

The CS and CSM modules allow performing collections without logging in to the system. This approach completely automates the procedures of terminal collection and data reception in the OC. To enable this functionality, the CS and CSM modules should be installed as Windows services.

Installation and management of the *Module* in the Windows service mode are performed in the "Service management / Service settings" tab (see Fig. 21).

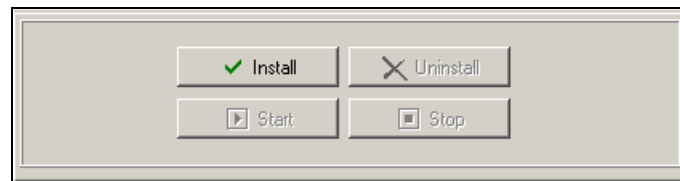


Fig. 21. Service settings

The tab allows performing the following operations:

- installing the service (see subsection 2.2.4.1);
- deleting the service (see subsection 2.2.4.2);
- starting the service (see subsection 2.2.4.3);
- stopping the service (see subsection 2.2.4.4).

2.2.4.1 Installing the Service

To install the service, click **Install** ("Install service"). The program will install the service, after which the following message will be displayed: *"Service installed successfully"*. The following buttons will become available: **Start** – starting the service, **Uninstall** – uninstalling the service.

To check the presence and the status of the service in the system, run the services console by selecting **"Start / Settings / Control Panel / Administrative Tools / Services"** (see Fig. 22).

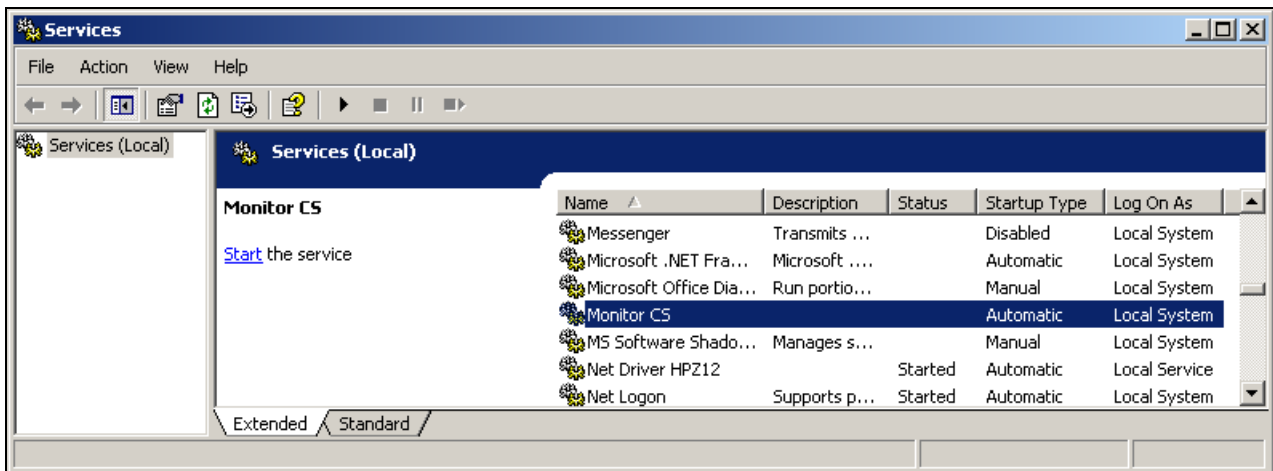


Fig. 22. Services console

After the service is installed and started, it will be always started automatically when logging in to the system (startup type – "Automatic").

2.2.4.2 Uninstalling the Service

The service can be uninstalled only if it is not started (if the service is started, the **Uninstall** button will be unavailable).

To uninstall the service, make sure it is stopped (or stop it, if it is started) and click **Uninstall** ("Uninstall service"). The program will uninstall the service and the following message will be displayed: *"Service uninstalled successfully"*.

2.2.4.3 Starting the Service

To start the service (when it has been already installed), click **Start** ("Start service"). The service will be started, and the "Started" status will be displayed in the "Status" column of the services console.

The service cannot be uninstalled when it is started, the **Uninstall** button will be unavailable.

2.2.4.4 Stopping the Service

To stop the started service, click **Stop** ("Stop service").

2.3 Saving the Module Settings

To save the parameters of the *Module* after they have been configured, press **Ctrl** + **S** or select **"Menu / Save parameters"** in the main menu (see Table 1, p. 9). The following message will be displayed: *"Restart CS Monitor to apply settings"*. Click **OK** and restart the *Module*.

If you need to cancel all changed settings, press **Ctrl** + **Q** or select **"Menu / Close"** in the main menu (see Table 1, p. 9). In this case, you do not need to restart the *Module*.

3 INFORMATION ABOUT THE *MODULE*

To view reference information about the *Module*, select "**Help / About**" in the main menu of the "**CS Monitor settings**" window (see Fig. 4, p. 8) or press **F1**.

The window that appears contains information about the name, version number and issue date of the installed software module (see Fig. 23).

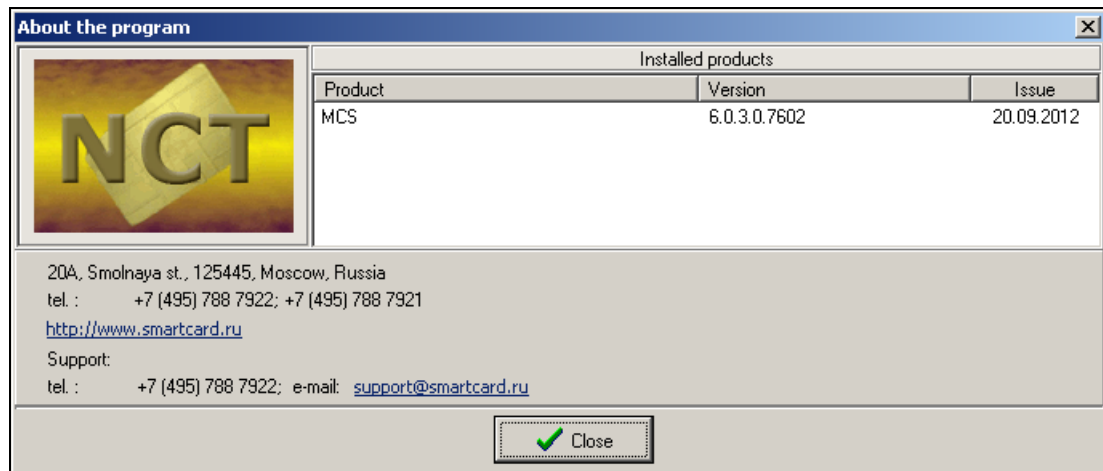


Fig. 23. Window with information about the software module

The window also contains information about the software developer (the address, telephone numbers, website address) and about the Technical Support Department.

To close the *Module* information window, click **Close**.

CONTACTS

If you have any questions regarding this software, please contact us at:

NCT Group
Technical Support Department
20A Smolnaya st., 125445, Moscow, Russia
E-mail: support@smartcard.ru
Phone: + 7 (495) 785-6262

The developer reserves the right to make changes to the <i>Module</i> without notifying the users
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