

Administrator's Guide

POS PSIM 1.0 (english)

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1 Administrator's Guide. Introduction

On this page:

- The purpose and structure of the Guide
- The purpose of the POS PSIM system

1.1 The purpose and structure of the Guide

POS PSIM. The Administrator's Guide is a reference manual to support the administration of the *POS PSIM* software package.

1.2 The purpose of the POS PSIM system

The *POS PSIM* software package is designed for monitoring cashier operations in retail outlets and has the following functionality:

1. simultaneous viewing of the video image, the receipt contents and the POS-terminal events in real time;
2. simultaneous recording of the video image, the receipt contents and the POS-terminal events;
3. creating user queries allowing to search the video archive by receipt contents and by system events;
4. integration with common POS-terminals.
5. Possibility to create, view and process general and itemized on the POS-terminal events in *Web Report System PSIM* subsystem.

Note.

Axxon PSIM WEB Report System subsystem is an optional component of *Axxon PSIM* software package and is delivered separately.

2 Hardware requirements

On the page:

- Computer requirements
- Operating system requirements
- Video camera requirements
- POS-terminal requirements
- Define required disk space (receipts database size)

2.1 Computer requirements

The POS PSIM software package requires the same computer configuration as the *Axxon PSIM (base)* software package; see the Axxon PSIM Software Package. The Administrator's Guide document.

2.2 Operating system requirements

The POS PSIM software package requires the same operating system configuration as the *Axxon PSIM (base)* software package; see the Axxon PSIM Software Package. The Administrator's Guide document.

2.3 Video camera requirements

The POS PSIM software package requires the same video cameras as the *Axxon PSIM (base)* software package; see the Axxon PSIM Software Package. The Administrator's Guide document.

2.4 POS-terminal requirements

We recommend creating no more than 200 **POS-terminal** objects (see The POS terminal object setup procedure) on one computer to ensure fail-free system operation.

MS SQL software should be installed on the same computer as the **POS-terminal** objects.

> **Attention!**
>
> Creating web reports (see Axxon PSIM WEB Report System. User Guide) may take a long time when there are lots of POS-terminals and the receipt database storage is big.

2.5 Define required disk space (receipts database size)

Disk space required for storage of receipts database can be calculated by the following formula:

Required disk space, GB = N (pcs.) * K (items/hr) * T (days) * 24 (hrs/day) * 2.4 (KB) / 10242 (KB/GB),

where

N is a number of objects generating events;

K is an average number of items per object per hour. It can be estimated experimentally in operation conditions;

T is an archive depth in days set while system configuration;

2.4 KB is a disk space required for storage of one event.

Example. Let us have 75 objects, each of them processes 1 item in 5 seconds (~720 items per hour). Archive depth is 90 days, 16 hours per day.

Required disk space, GB = 75 (pcs.) * 720 (items/hr) * 90 (days) * 16 (hrs/day) * 2.4 (KB) / (1024*1024) (KB/GB) = 177.98 GB ~ 180 GB

3 Personnel skills requirements

The *POS PSIM* software package requires the same personnel skills as the *Axxon PSIM (base)* software package; see the Axxon PSIM Software Package. The Administrator's Guide document.

4 General description of the POS PSIM software package

POS PSIM includes the following software modules:

1. The basic version of the *Axxon PSIM* software package – *Axxon PSIM* (base);
2. *POS-operations* module.

The *POS-operations* module has the following functionality:

1. Simultaneous viewing of the video image, the receipt contents and the POS-terminal events in real time.
2. Simultaneous recording of the video image, the receipt contents and the POS-terminal events.
3. Creating user queries allowing to search the video archive by receipt contents and by system events.
4. The module provides user interfaces for the following functional modules:
    a. *Monitor* module (video and titles display), represented by the **Monitor** window;
    b. *Search by captions* module (searching the video database by captions), represented by the **Search by captions** window;
    c. *Receipt viewer* module (searching the receipts by event), represented by the **Receipt viewer** window.

The following databases are used in *POS PSIM*:

1. Internal database of the server – contains the system settings and the data on registered events.
2. Captioner – contains the data from POS-terminals.
3. Receipts database – contains the data from POS-terminals.

> **Note**
>
> By default, the received local timestamp is recorded to the corresponding POS PSIM database without any changes. To convert it to UTC, set the value "**1**" for the **UseLocalTimestamp** parameter (see Registry keys reference guide for details. For information about system registry, refer to Working with Windows OS registry).

Database has MS SQL format. A list of MS SQL Server versions, supported in the *POS PSIM* software is identical to the list of supported versions by the *Axxon PSIM* software.

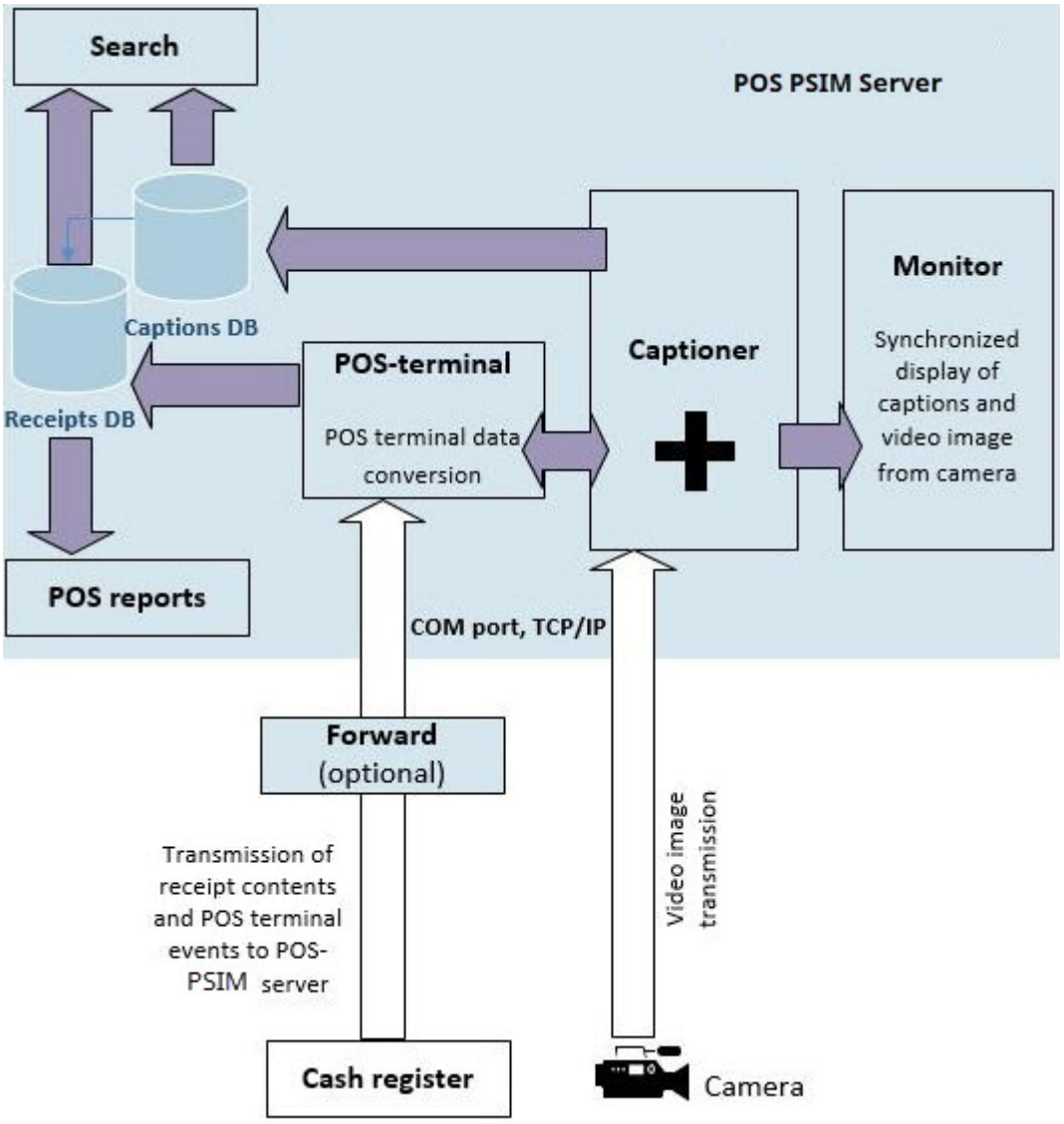
The *POS-operations* module uses the *Captioner* module, which is installed with the *Axxon PSIM* (base) by default. Using the *POS-terminal* module, the *Captioner* module forms the receipts database; overlays the video image received from the surveillance camera with the receipt contents; adds the captioning results to the captioner, and displays the resulting video image via the **Monitor** interface object.

The *Search by captions* module allows searching the captioners, and the *Receipt viewer* module allows searching the receipts database. The captions and receipts databases are stored in the folder specified during the MS SQL Server setup, see the information at http://www.microsoft.com.

The video archive is stored in the folder specified during the *Axxon PSIM* (base) software setup; see the Axxon PSIM Software Package. The Administrator's Guide document.

The *POS PSIM* software functionality is specified in the **psim.sec** key file of the *Axxon PSIM (base)* software platform; see the Axxon PSIM Software Package. The Administrator's Guide document.

The *POS-operations* module structure is shown in the figure below:


Search
POS PSIM Server
Captions DB
Receipts DB
POS-terminal
POS terminal data conversion
Captioner
Monitor
Synchronized display of captions and video image from camera
POS reports
COM port, TCP/IP
Forward
(optional)
Transmission of receipt contents and POS terminal events to POS-PSIM server
Video image transmission
Cash register
Camera

5 Installation of the POS PSIM system

5.1 General description of POS PSIM distribution kit

POS PSIM is supplied as a software installation package (distribution kit). The current version of the distribution kit can be downloaded from the official AxxonSoft website.

The distribution kit contains all the necessary software components for installing the *POS PSIM* software package on a base computer.

The distribution kit allows you to install, restore and remove the *POS PSIM* software package.

Attention!

- Prior to installing, restoring or removing the *POS PSIM* software package, the *Axxon PSIM* operation should be shut down.
- Administrator rights are required for installing, restoring or removing *POS PSIM*.

5.2 Installation

The *POS PSIM* software is installed as a part of the *Axxon PSIM* software.

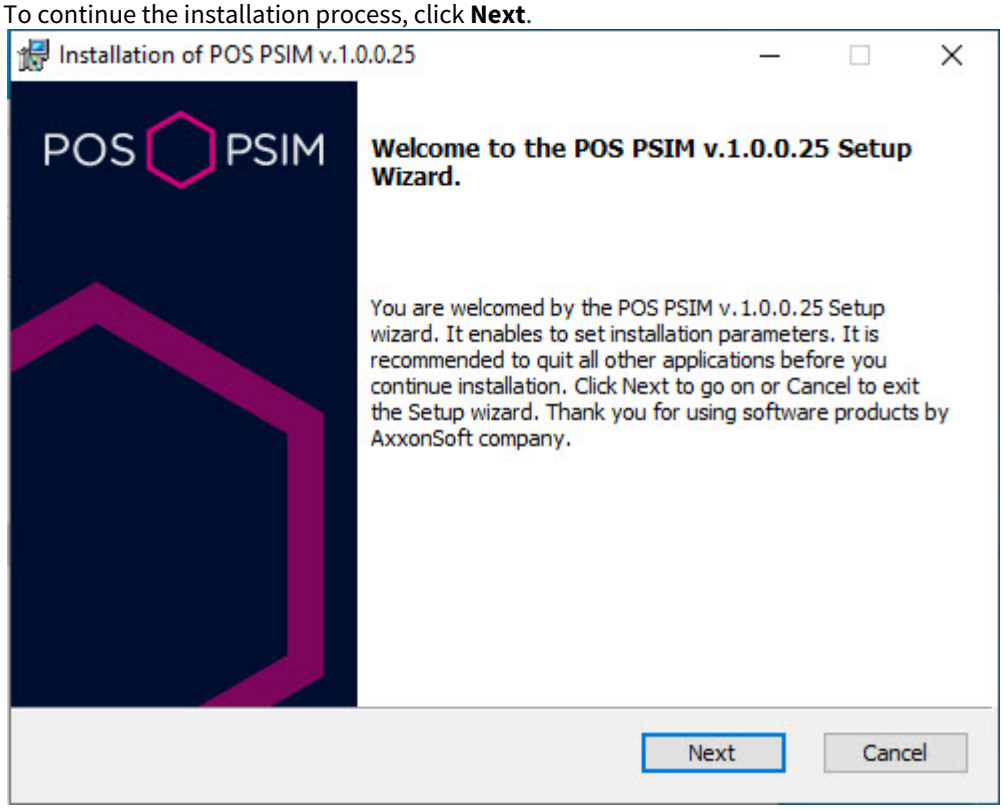
Important!

The *POS PSIM* software should be installed on both **Server/Remote administrator workplace** and **Client**. For details, see Axxon PSIM. Administrator's Guide.

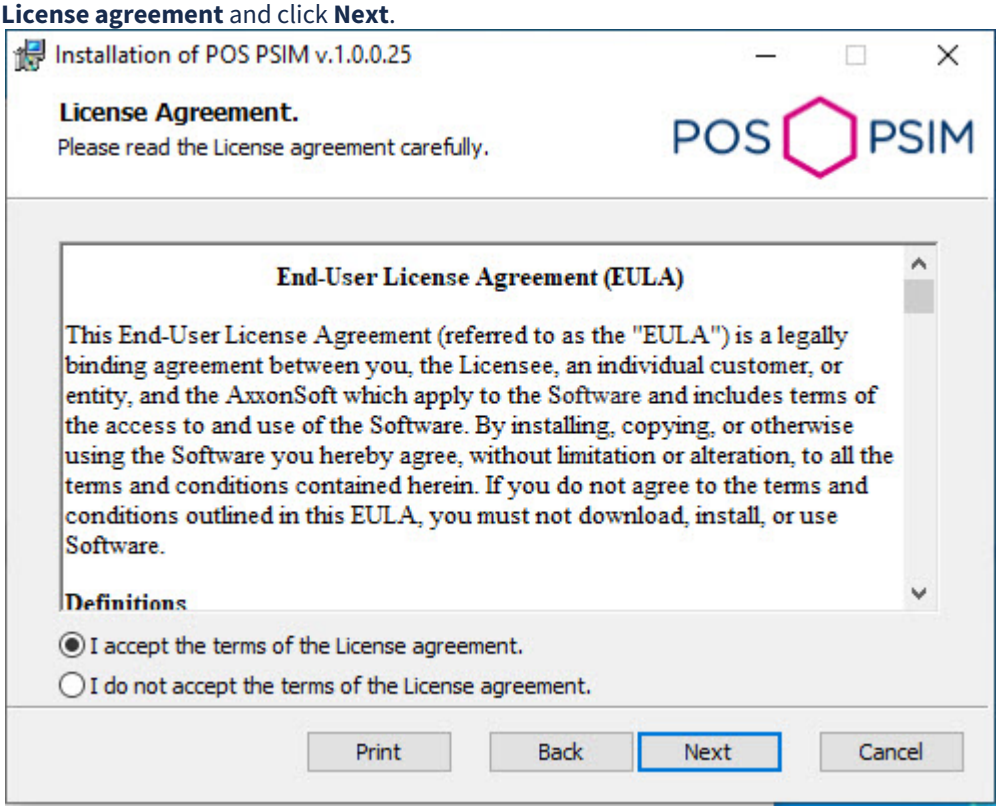
To install *POS PSIM*, do the following:

1. In the root directory of the distribution package, run the setup.exe executable file.

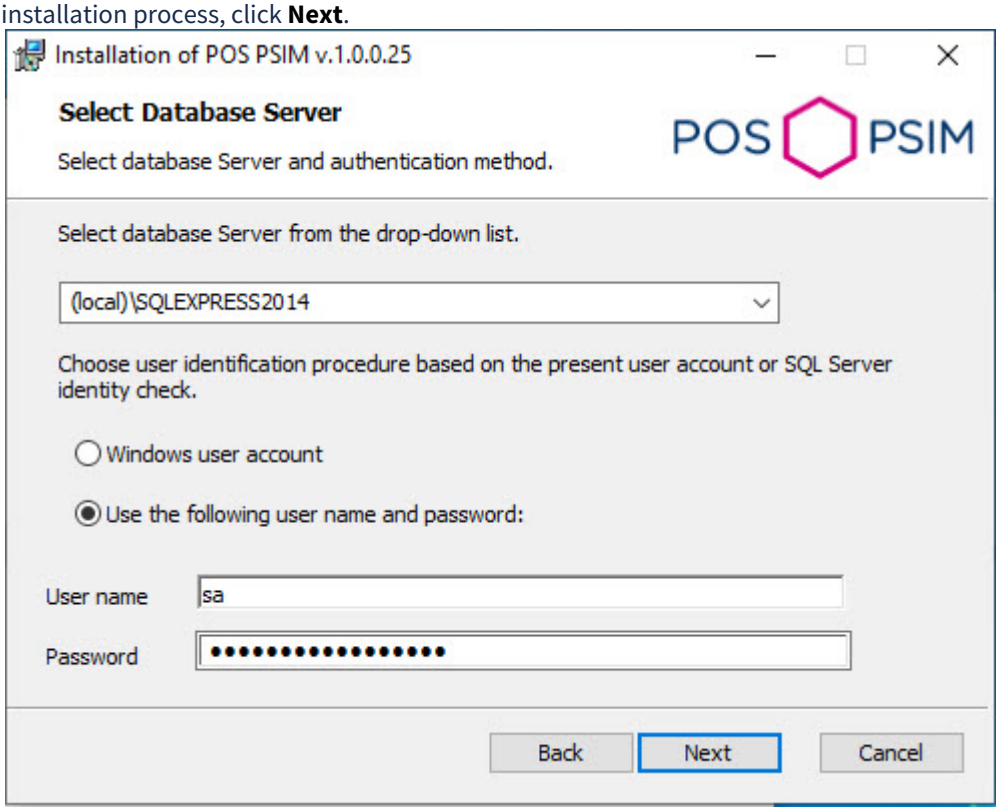
2. To continue the installation process, click **Next**.



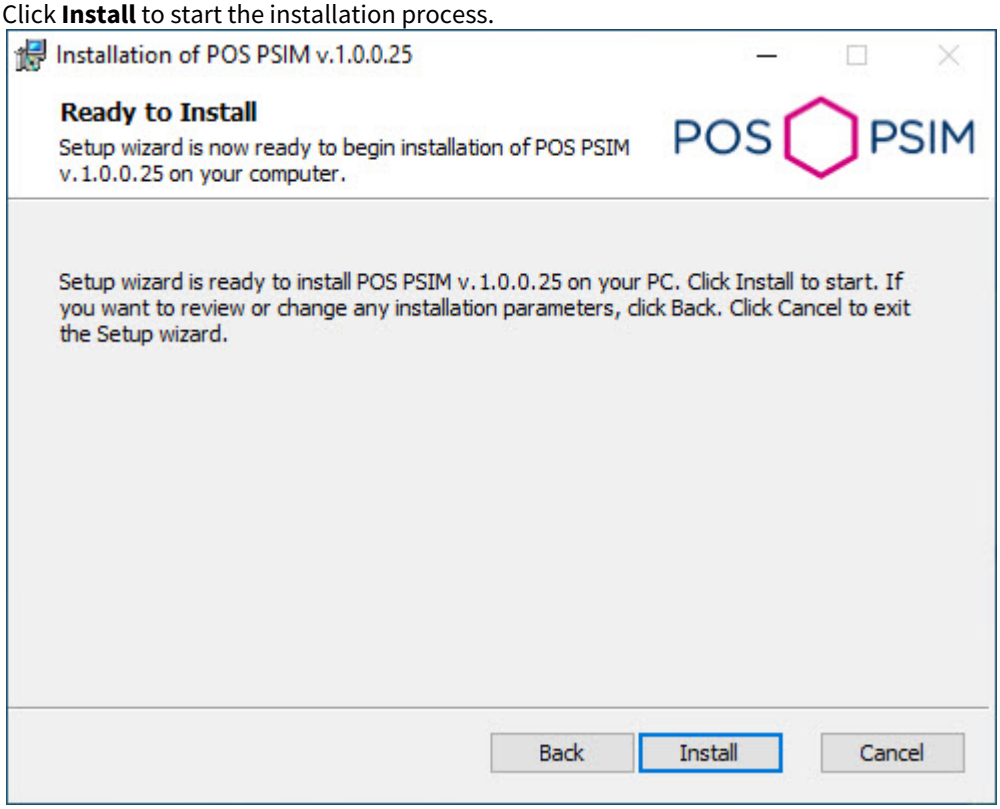
3. Read the terms of the license agreement carefully. Then set the radio button to **I accept the terms of the License agreement** and click **Next**.



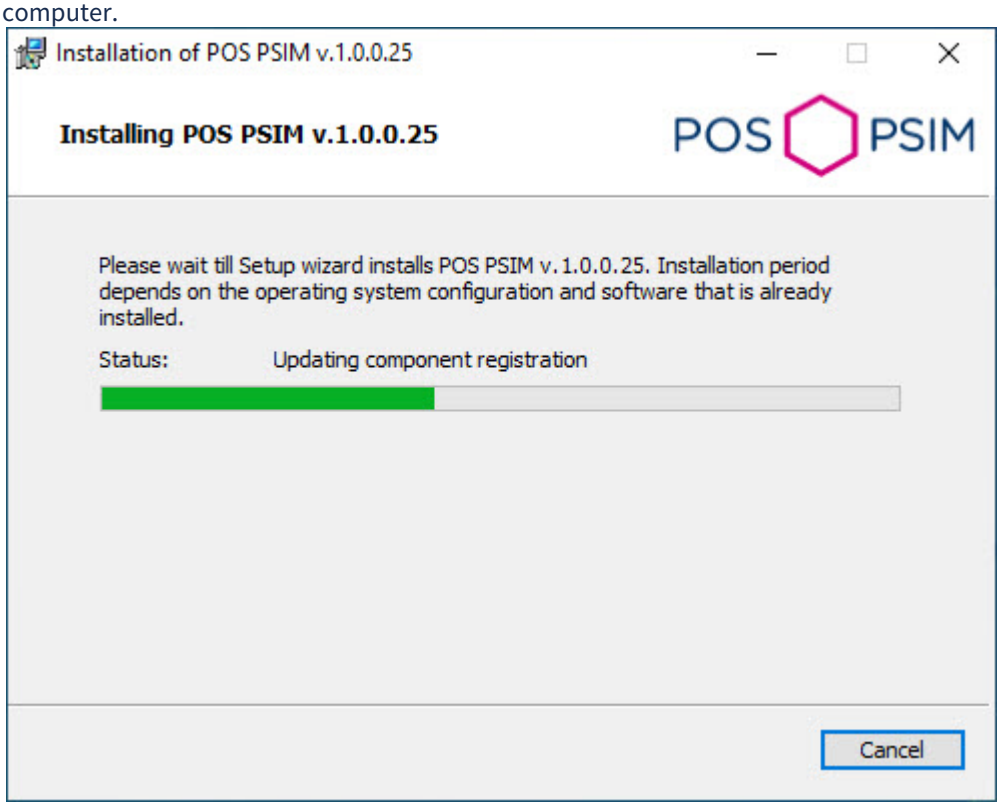
4. Select the database MS SQL Server and specify the authorization parameters for connection. For details, see Installation of Axxon PSIM™ software as a Server/Remote administrator workplace. To continue the installation process, click **Next**.



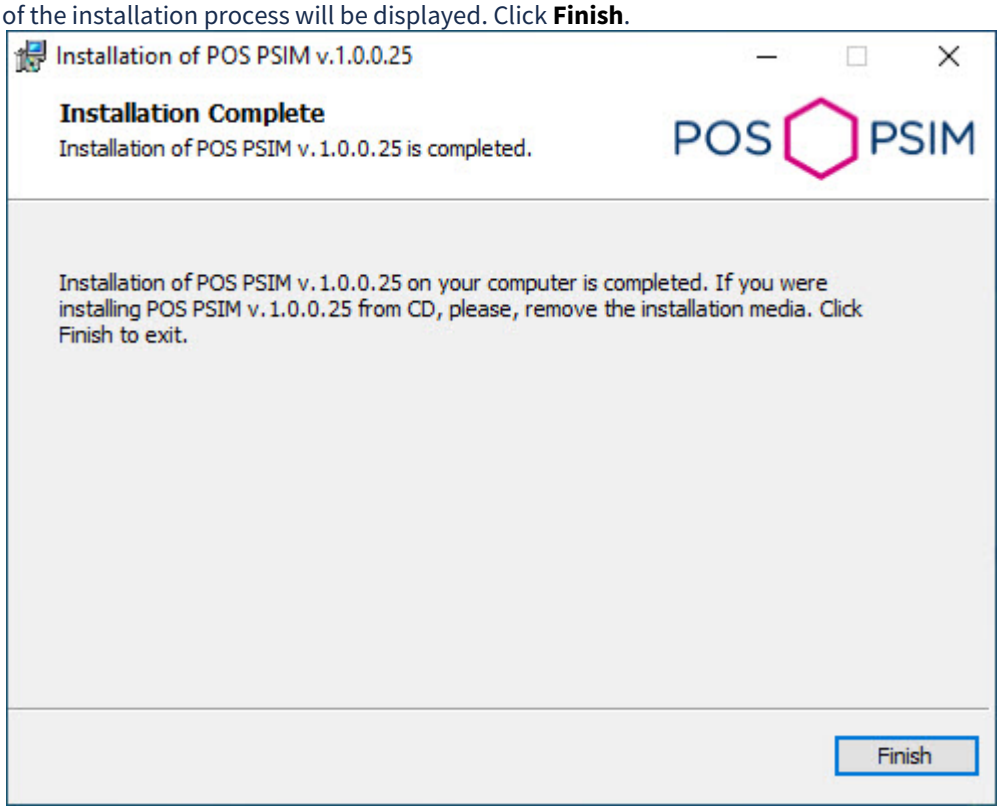
5. Click **Install** to start the installation process.



6. As a result, the necessary components of the *POS PSIM* software package will be copied to hard drive of your computer.



7. After all software components are successfully copied on your hard drive, the message about the completion of the installation process will be displayed. Click **Finish**.



The *POS PSIM* installation is now complete.

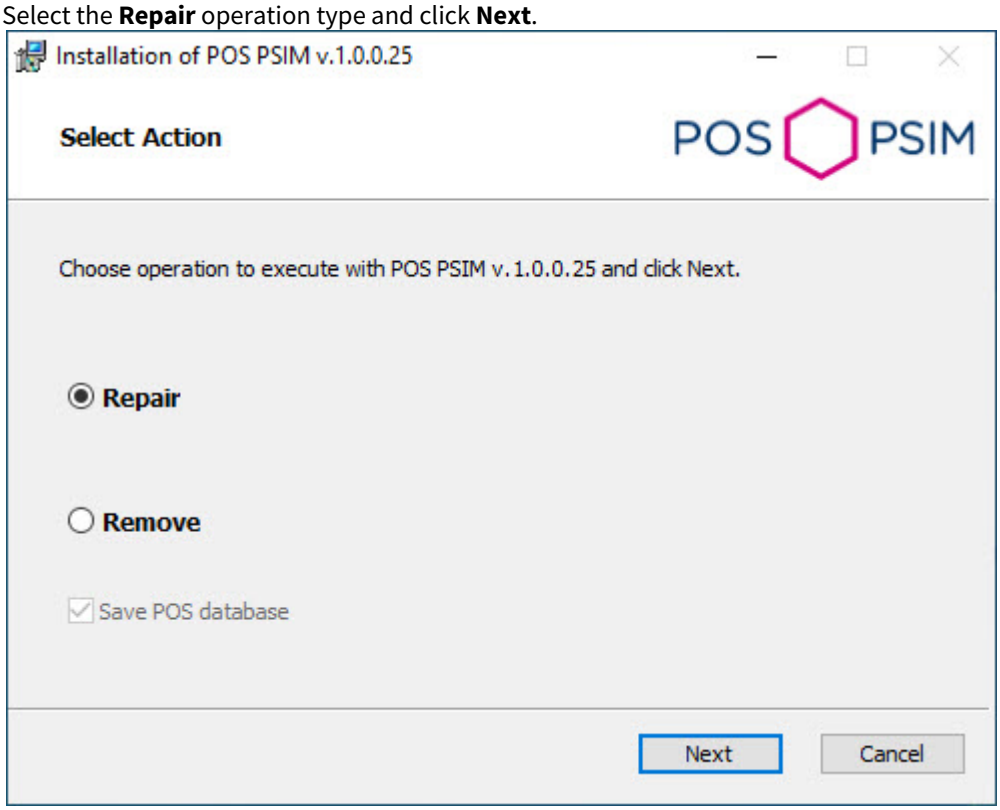
5.3 Repair

The repair mode is used if *POS PSIM* software components need to be re-installed.

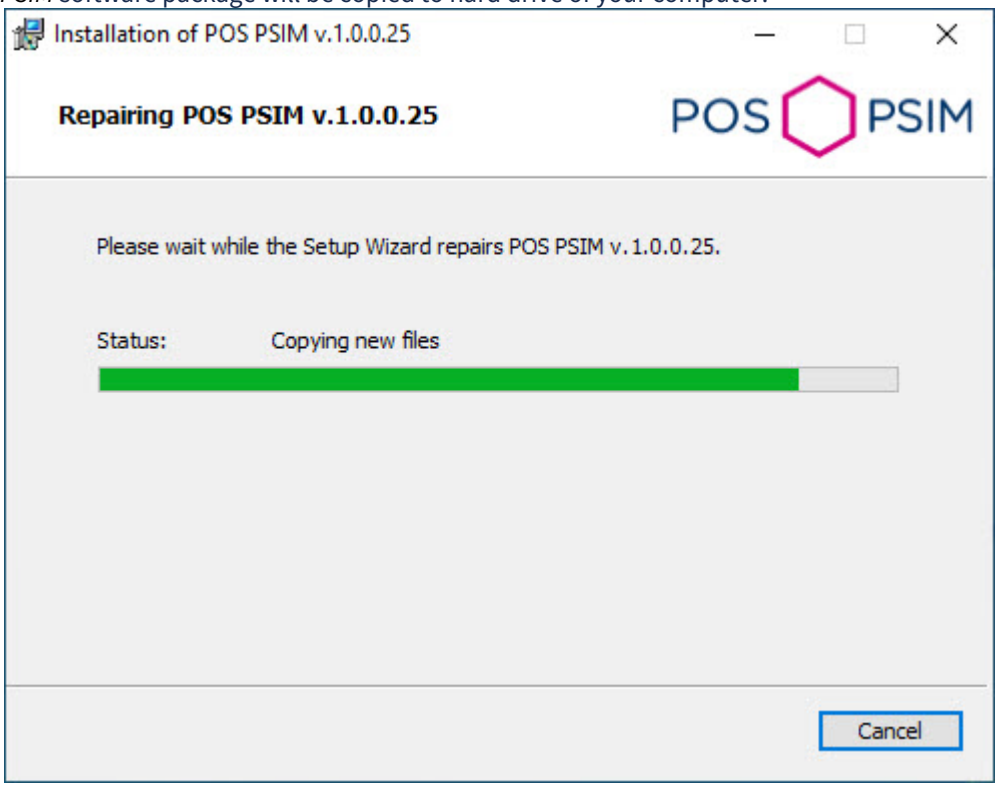
To repair the *POS PSIM* software, do the following:

1. In the root directory of the distribution kit, run the setup.exe file.

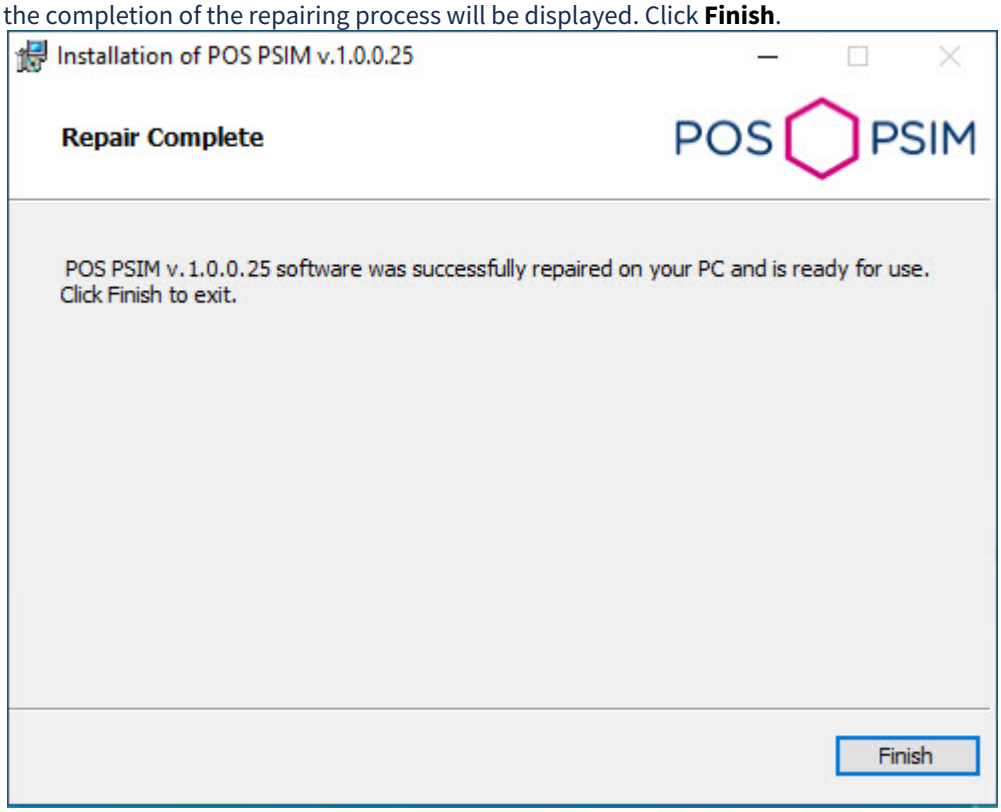
2. Select the **Repair** operation type and click **Next**.



3. As a result, the installed components will be checked and the necessary components of the *POS PSIM* software package will be copied to hard drive of your computer.



4. After all software components are successfully copied on your hard drive, the message about the completion of the repairing process will be displayed. Click **Finish**.



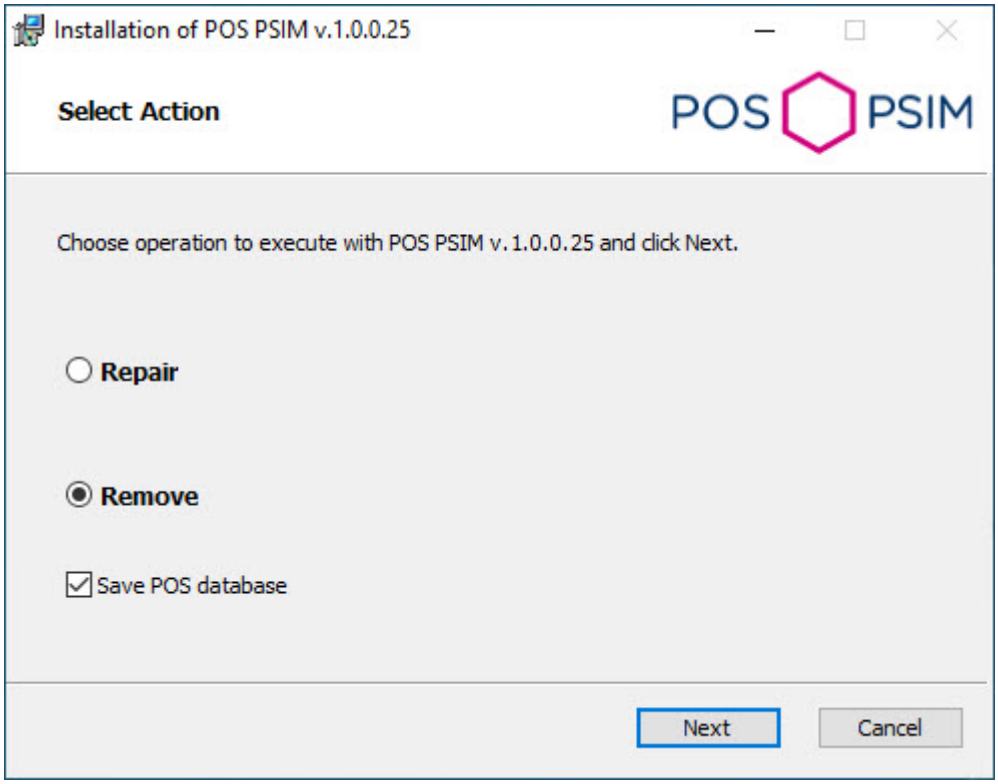
The *POS PSIM* repair is now complete.

5.4 Removal

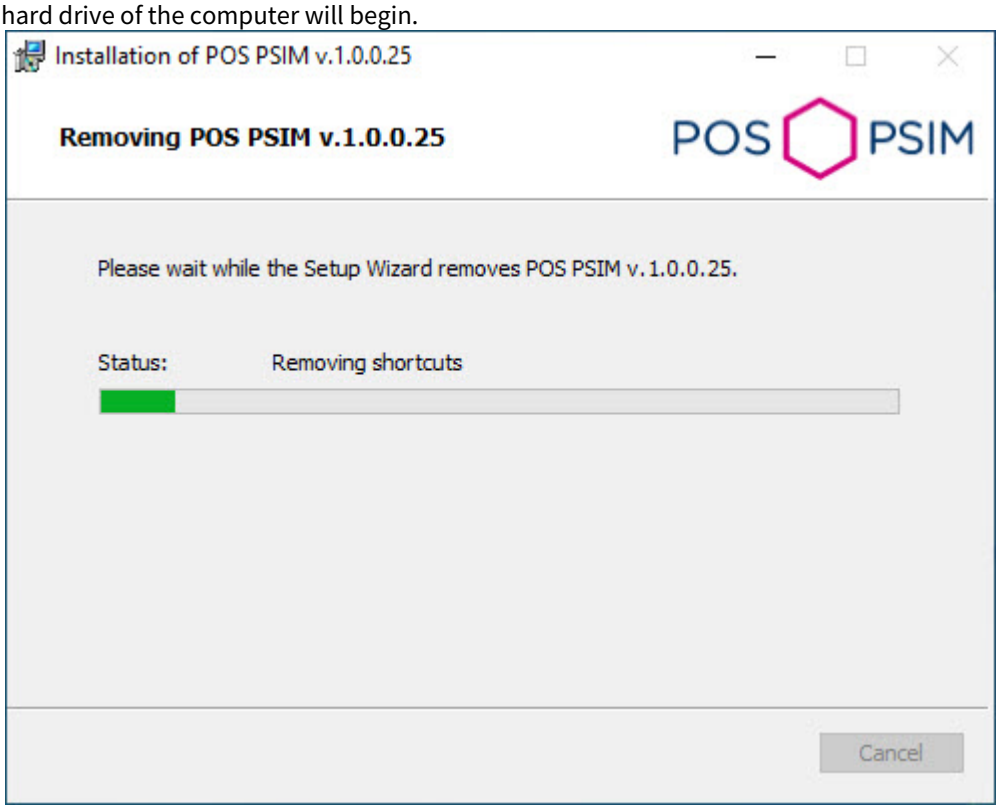
To remove the *POS PSIM* software, do the following:

1. In the root directory of the distribution kit, run the setup.exe file.
2. Select the **Remove** operation type and click **Next**.

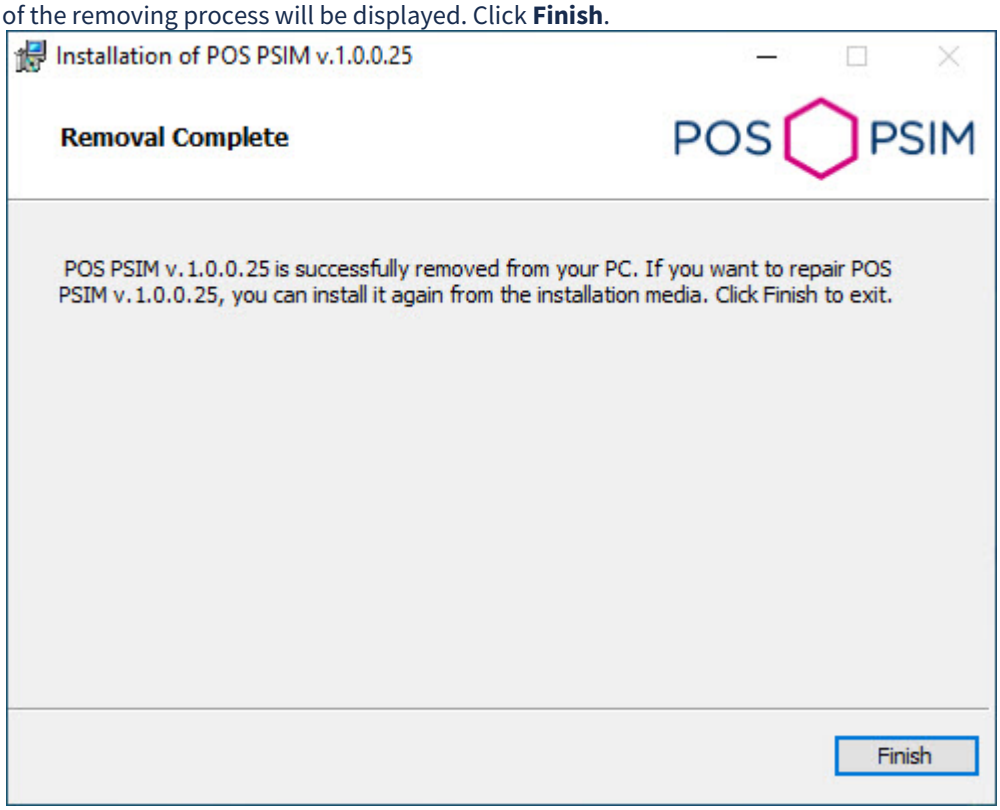
> **Note**
>
> To also remove the receipt face database, uncheck the **Save POS database** checkbox.



3. As a result, the process of removing the installed components of the *POS PSIM* software package from the hard drive of the computer will begin.



4. After all software components are successfully removed from hard drive, the message about the completion of the removing process will be displayed. Click **Finish**.



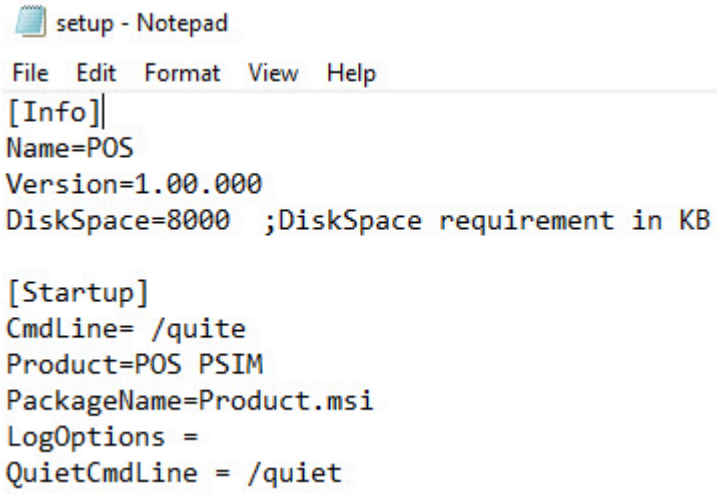
The *POS PSIM* removal is now complete.

5.5 Installation in silent mode

It is possible to install *POS PSIM* software in silent mode. To do this, select one of the following options:

1. In the setup.ini file, located in the directory with the *POS PSIM* distribution kit, specify the following:

```
CmdLine= /quiet
```



When you run the setup.exe file, the *POS PSIM* installation in silent mode will begin.

2. Go to the directory with the *POS PSIM* distribution kit, and enter the following command at the Windows command prompt:

```
setup.exe /quiet
```

Immediately after running this command, the *POS PSIM* installation in silent mode will begin.

5.6 Remote installation and deinstallation of POS PSIM

Remote installation and deinstallation of *POS PSIM* is done with the help of the wmic.exe command line utility. This utility is a part of Windows OS. To run the utility, enter **wmic** without quotation marks in Windows command line.

Detailed information about this utility can be found on Microsoft technical documentation page https://docs.microsoft.com/en-us/. At the moment of creating this section, the description of the utility is available at https://docs.microsoft.com/en-us/windows/win32/wmisdk/wmic.

> **Note**
>
> The wmic.exe utility does not work correctly with VMware virtual machines. It is not guaranteed to work with other virtual machines.

To run wmic on a remote computer, you should disable UAC (for instructions on how to do this, see OS settings for correct operation of Remote Admin Workstation or Server).

The installation and deinstallation methods described in this section apply to domain and extra-domain computers.

It is necessary to copy *POS PSIM* distribution kit to the computer local disks where the installation will be performed in advance.

To do this, you can use the following command line script:

```
xcopy %Path_to_folder_with_distribution_kit% %Network_folder_on_the_target_PC% /e
```

Here:

- %Path_to_folder_with_distribution_kit% is the path to the folder with the distribution kit on the local computer:
- %Network_folder_on_the_target_PC% is the path to the folder on the computer where you want to install the software. You should have the write access to it;
- the /e attribute copies all subdirectories and their contents, including empty directories.

> **Note**
>
> The UNC path is in the format \\<server IP address>\<Shared folder on this server>\... . The ellipses here represent the path from the shared folder to the folder with the distribution kit. If you are installing on the computers in the domain, specify the address of the server that contains the distribution kit folder available to all computers.

Detailed information about the xcopy utility can be found on Microsoft technical documentation page. At the moment of creating this section, the description of the utility is available at https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-xp/bb491035(v=technet.10).

Note that the installation method described in this section allows you to install only the core product without any add-ons.

5.6.1 Remote installation of POS PSIM

In order to install *POS PSIM* on a remote computer, run the following command with the wmic.exe utility:

```
/NODE:"Computer_name" /USER:"User_name" /PASSWORD:"Password" product call
install true, "%installer parameters%", "%Path_to_folder_with_distribution_kit%
\Product.msi"
```

Here:

- /NODE – the name of the target computer on which *POS PSIM* is being installed;

> **Note**
>
> The NODE list can be a text file that specifies the names of the target computers in column.

- /USER and /PASSWORD – login and password of the user who has the rights to install the software on the remote computer;
- "%Path_to_folder_with_distribution_kit%\Product.msi" – path to the Product.msi installer file you need to run. It is the local path to the folder to which you copied the distribution kit.;
- %installer parameters% – installer options. The following parameters can be applied to Product.msi:
    a. The parameters that can be applied to any msi file (for reference, run the msiexec.exe /? command in the command line from <WINDOWS>\system32\ directory).
    b. The parameters described in the setup.exe help article in the /CMD="[commands]" section (for reference, run the setup.exe /? command in the command line from the installer folder. These commands are also described in Installing Axxon PSIM™ software in a silent mode section).
    c. The parameters that are set in setup.exe during installation:
        - CMD_INSTALLTYPE – Client, Server, Admin;
        - REMOVEALL (0, 1) – removal with/without saving the configuration;
        - NOOSCHECK=1 – disable the OS compatibility check.

> **Note**
>
> The operation of these parameters is not guaranteed if there is a branch in the registry:

- For x86 system: HKEY_LOCAL_MACHINE\SOFTWARE\AxxonSoft\AxxonPSIM\InstallPropertyInfo
- For x64 system: HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\AxxonSoft\AxxonPSIM\InstallPropertyInfo

The branch has the parameters of the previous installation.

Example

Example of an installer parameter string:
REBOOT=ReallySuppress LANGUAGE="en" TRANSFORMS="%Path_to_folder_with_distribution_kit%\languages\Setup\en\en.mst" CMD_INSTALLTYPE="Server"
In the example above:
REBOOT=ReallySuppress cancels computer reset at the end of installation.
LANGUAGE="en" selects the product language. The product language is English.
TRANSFORMS="%Path_to_folder_with_distribution_kit%\languages\Setup\en\en.mst" specifies the path to the installer language mst-patch (specifies the installer language).
CMD_INSTALLTYPE="Server" specifies *Axxon PSIM* installation type − Server. It can also take the Admin value (if Remote Administrator's workplace installation type is required) and Client (if Remote Client installation type is required).

5.6.2 Remote deinstallation of POS PSIM

In order to deinstall *POS PSIM*, run the following command in the wmic.exe utility:

```
/NODE:"Computer_name" /USER:"User_name" /PASSWORD:"Password" product where name="Product_name" call uninstall
```

Here **Product_name** is the name under which *POS PSIM* is installed, usually **POS PSIM v.Build_number**. The name can be found in the registry in HKEY_LOCAL_ MACHINE\Software\Microsoft \Windows\CurrentVersion\Uninstall section.

6 POS PSIM configuration and setup

6.1 POS PSIM configuration and setup procedure

Configuring the *POS PSIM* software package includes the following stages:

1. Create and set up the **Captioner** objects for the cameras whose video image should be overlaid with titles
2. Create and set up the **POS-Terminal** object
3. Create and set up the **Search by captions** object
4. Create and set up the **Receipt viewer** object
5. Create and set up the **Shop** system object (used when reports are formed in *Axxon PSIM WEB Report System* subsystem).
6. Create and set up the **POS Replicator** system object (used when reports are formed in *Axxon PSIM WEB Report System* subsystem).

> **Note.**
>
> It's also necessary to set up *Web Report System PSIM subsystem* (see Axxon PSIM WEB Report System. User guide).

6.2 The Captioner object setup

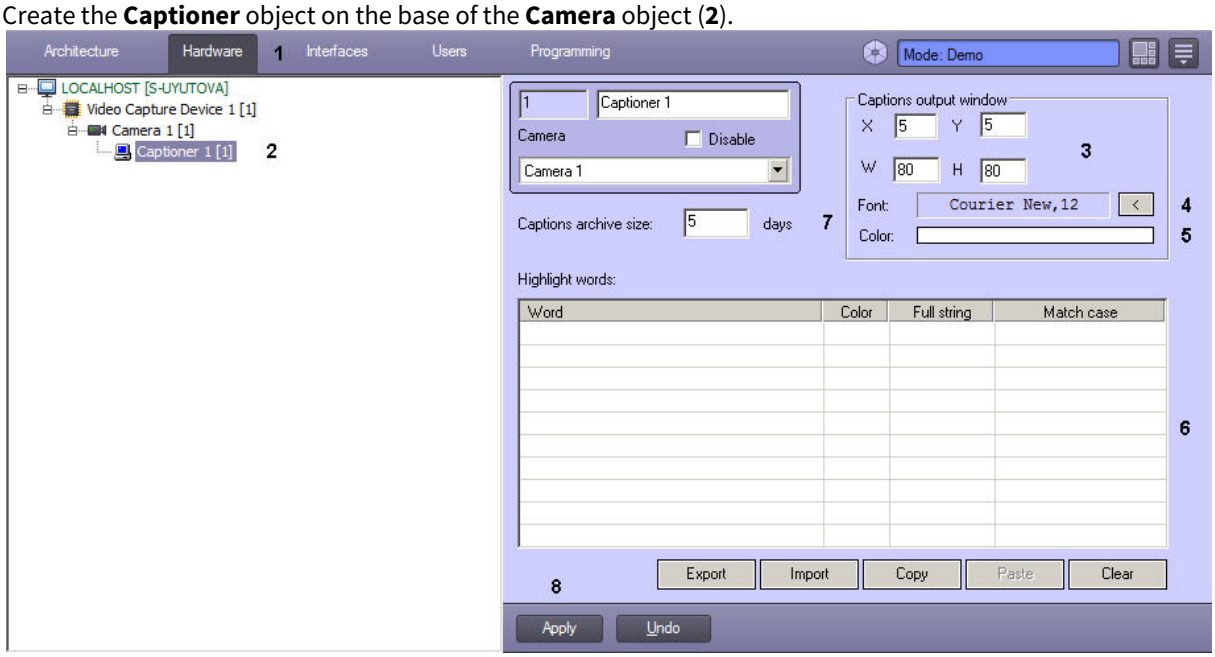
The **Captioner** object is a child object of the **Camera** system object. It is designed for configuring titles display on a video recording and maintaining titles database.

> **Attention!**
>
> If the incoming packets are sent to the POS-terminal in the UTF-8 code, set the **1** value for the **DecodeUtf8** registry key for the proper titles displaying (for details, see Registry keys reference guide, for more information about working with the registry, see Working with Windows OS registry).

To configure the **Captioner** object, do the following:

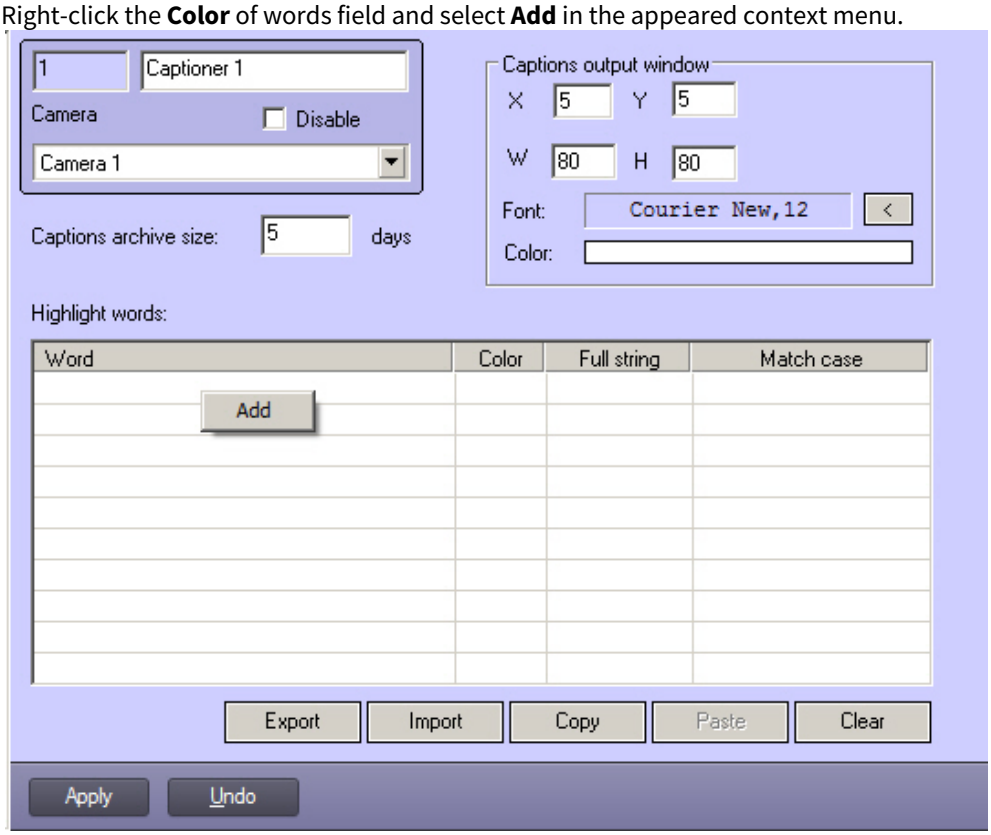
1. Go to the **Hardware** tab of the **System settings** dialog box (**1**)

2. Create the **Captioner** object on the base of the **Camera** object (**2**).

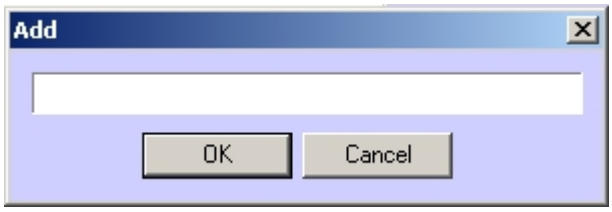


3. Specify the parameters of the titles output window (**3**):
   a. Set coordinates of the upper left corner of the titles output window: **X** (horizontal indent from left border of screen) and **Y** (vertical indent from top border of screen) fields.
   b. Set measurement of the titles output window: **W** (width of the titles output window) and **H** (height of the titles output window) fields.
4. Specify the parameters of font used for titles output:
   a. Click the < button (**4**).
   b. In the appeared Windows dialog box, specify font parameters and click **OK.**
   c. Double left-click the **Color** field (**5**)
   d. In the appeared Windows dialog box, select color and click **OK.**
5. Specify the parameters for words highlighting (**6**):

a. Right-click the **Color** of words field and select **Add** in the appeared context menu.



b. In the appeared dialog box, type-in a required word and click **OK**. The word is added to the **Color** of words table.



c. Specify the color with which the word will be highlighted by double left-clicking the **Color** field next to the specified word. In the appeared Windows dialog box, select color and click **OK.**
d. If the full string with a word is to be highlighted, then set the **Full string** checkbox.
e. If the case of word characters is to be matched, then set the **Match case** checkbox.
f. Repeat steps 5.1-5.5 for all required words.

> **Note.**
>
> Use the context menu for operations with words in the table (right-click a word). If the table is to be cleared, then click **Clear**.

6. Specify the maximum number of days as the difference between the newest and the oldest entry in the titles database for the given captioner in the **Captions archive size__days** field (**7**). Entries which were added earlier than the specified number of days before the most recent entry will be automatically deleted "in a loop". If the **0** value is specified, the entries will not be deleted "in a loop".

> **Example**

For example, the titles archive size is 1 day. On Friday, the titles from the **Captioner 1** were added to the titles database. On Saturday and Sunday the camera was turned off, and the titles were not recorded. On Monday the camera was turned on, and the titles from the **Captioner 1** from Friday remained in the titles database until the new record was added to the titles database of the **Captioner 1**. In 3 minutes after the new record was made on Monday, the captions from Friday were deleted.

7. Click the **Apply** button (**8**).

The **Captioner** object is now configured.

Note.

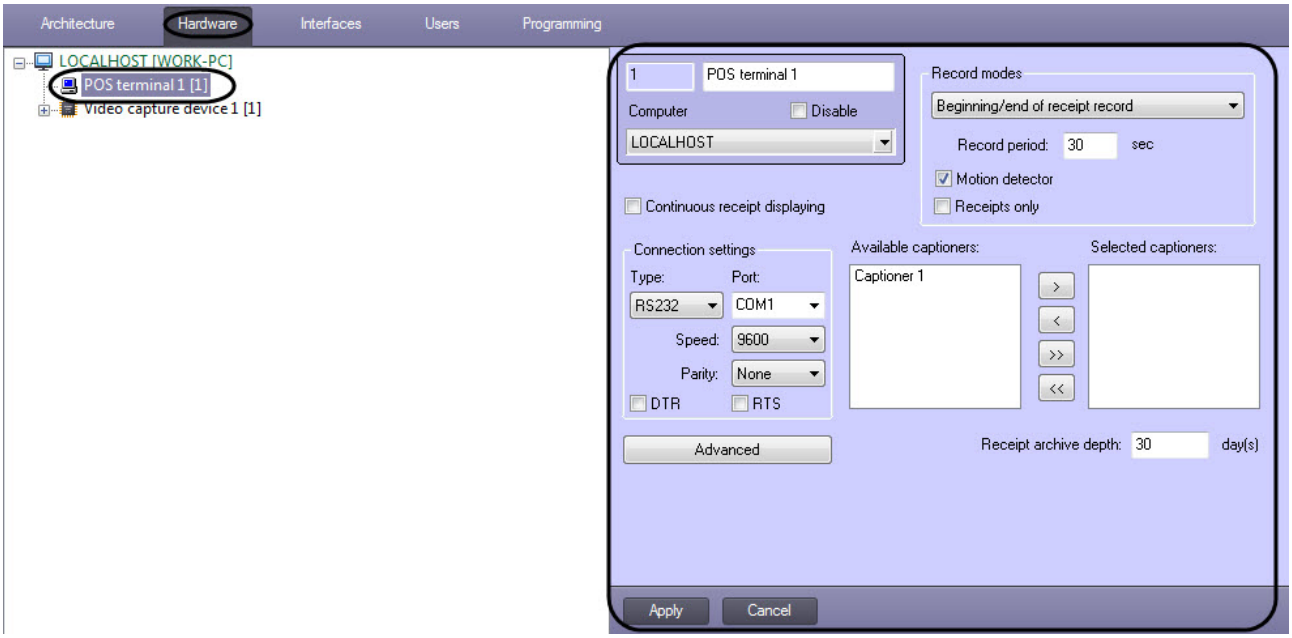
Use the **Copy** and **Paste** buttons to import all settings from one **Captioner** object to another.
The **Color of words** table can be saved and imported from a file. The **Export** and **Import** buttons are used to save and import the table.

6.3 The POS terminal object setup

6.3.1 The POS terminal object setup procedure

The **POS terminal** object is the main object of the *POS PSIM* software package; it processes the data received from the real-world POS-terminals.

To create and set up the **POS terminal** object, use the **Hardware** tab in the **System Settings** window.



The **POS terminal** object setup includes the following steps:

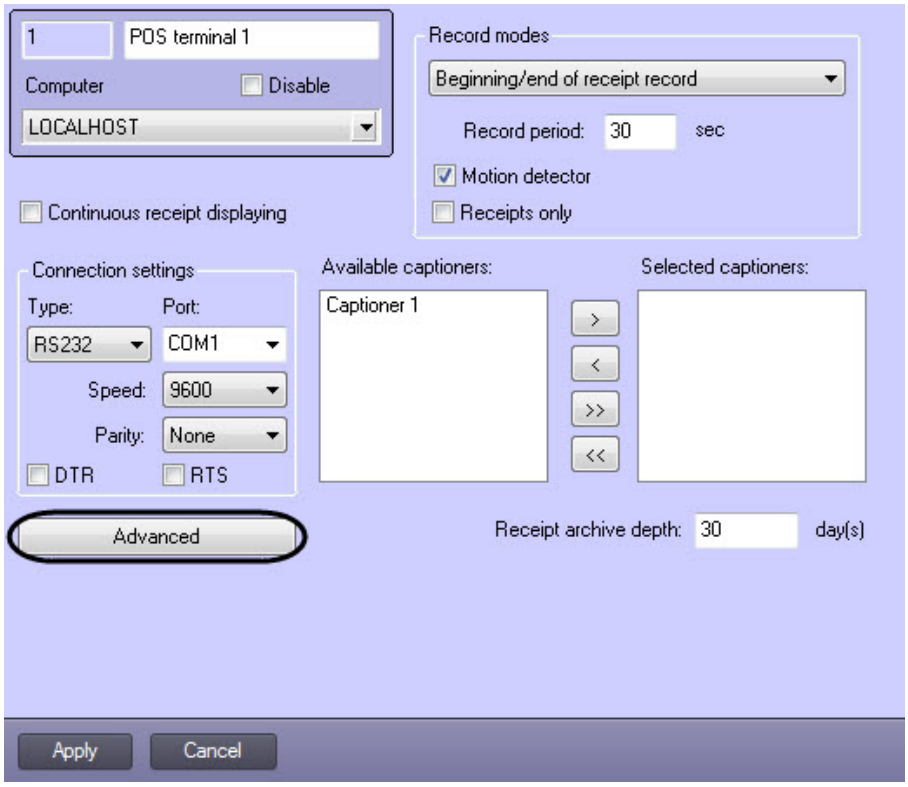
1. Select the type of **POS terminal** and set the connection parameters.
2. Select the captioners.
3. Specify the receipt processing rules.
4. Specify the video recording parameters.
5. Specify the receipts archive size.

6. Specify the text events rules (optional).
7. If necessary, enable the continuous receipt displaying.
8. Set up the parser (optional).

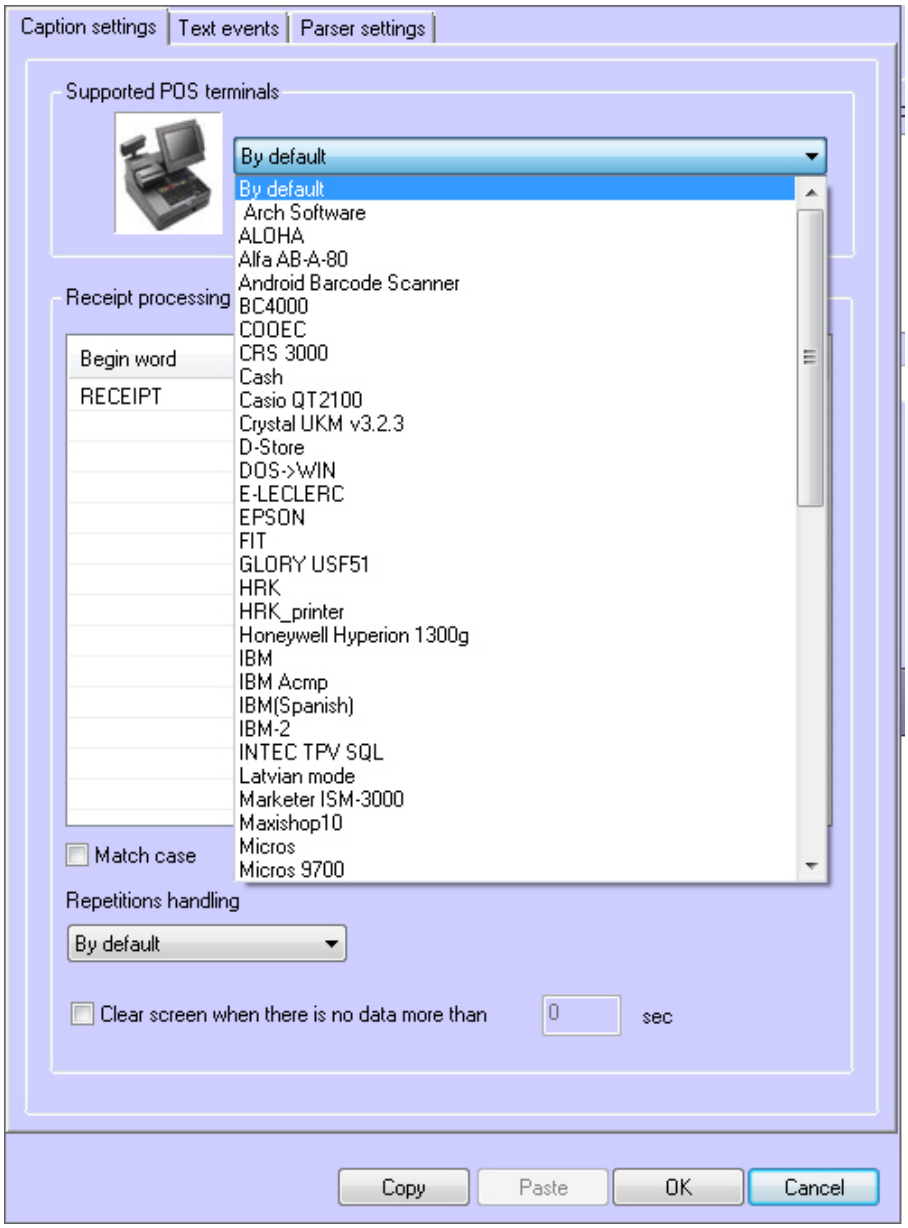
6.3.2 Selecting the type of POS terminal and setting the connection parameters

To start using a **POS terminal**, select its type and set up the connection. To select the type of **POS terminal** and set the connection parameters, do the following:

1. Click the **Advanced** button.



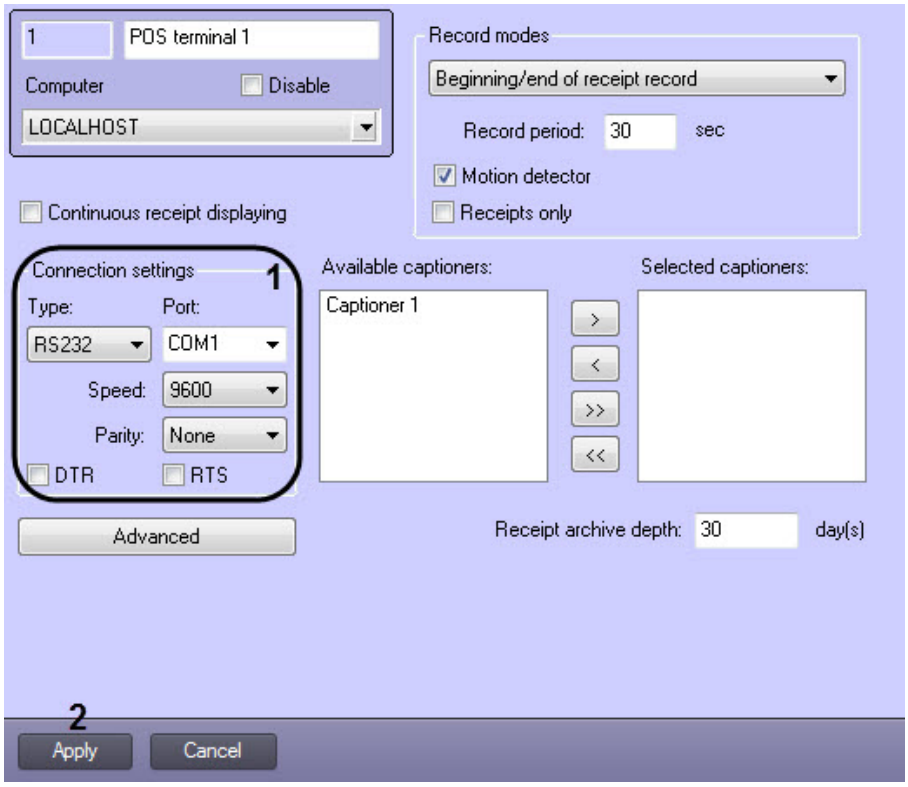
2. In the dialog box that opens, select the POS terminal in the **Supported POS terminals** drop-down list and click **OK**.



> **Note**
>
> Parser xml_titles.txt configuration is needed when choosing the XML protocol from the **Supported POS terminals** drop-down list (see Parser types, and Description of XML protocol packages for interaction with POS PSIM system).

3. Specify the parameters in the **Connection settings** group (1).

> **Note**
>
> If a Serial-USB (Serial-Ethernet) adapter is used to connect the POS terminal, select RS232 in the Type field (see the Auxiliary communication devices section).



> **Note**
>
> To test the connection, use the HyperTerminal utility included in Windows (see the Testing the connection between the POS-server and the POS-terminal section).

4. Click **Apply** (2).

The type of POS terminal and its connection parameters are now set.

> **Warning!**
>
> To enable re-connection to the POS-server in case of connection failure (including regular connection failures) set the line **EnablePing** parameter to **1** in the Windows registry (for more details, refer to the Registry Keys Reference Guide).

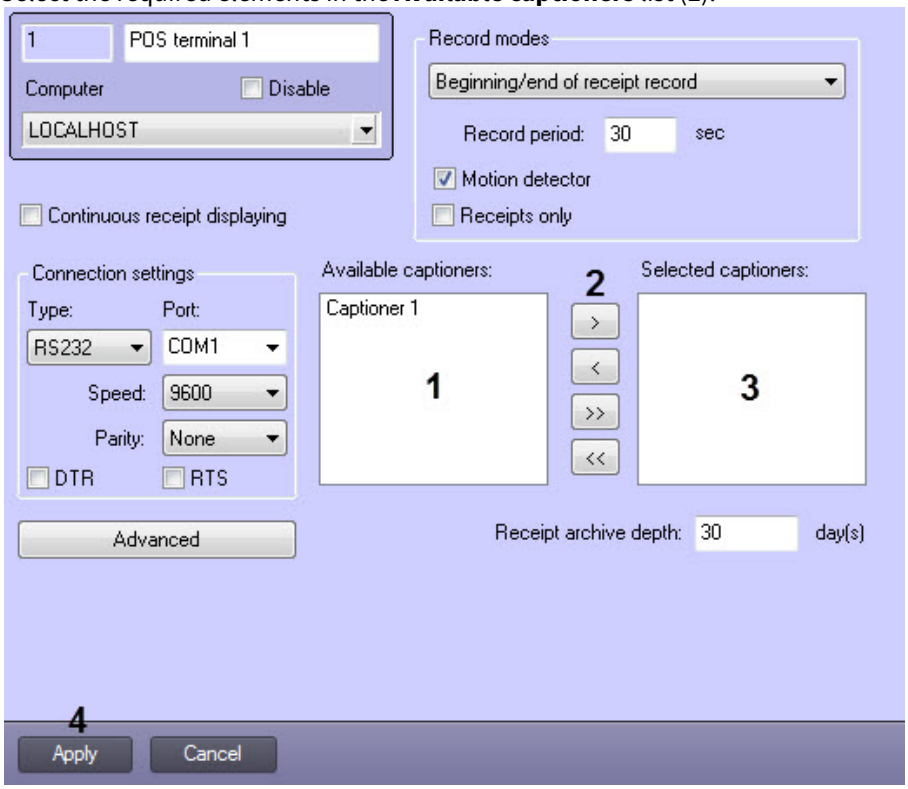
> **Important!**
>
> If POS terminal failure occurred while connecting it to the *POS PSIM*, disable the COM port control by setting the **SetFlowControlNone** parameter to **0** in the Windows registry (for more details, refer to the Registry Keys Reference Guide).

> **Note**
>
> Handling the Windows registry is described in the *Axxon PSIM* Software Package. The Administrator's Guide document.

6.3.3 Selecting the captioners

Select the captioners, where the processed data should be taken from. To select the captioners, do the following:

1. Select the required elements in the **Available captioners** list (**1**).



2. Click the > button (**2**) to move the selected captioners, or the >> button to move all captioners from the list of available titles databases to the **Selected captioners** list (**3**).

> **Note.**
>
> Alternatively, the < and << buttons are used to remove the selected or all captioners from the **Selected captioners** list.

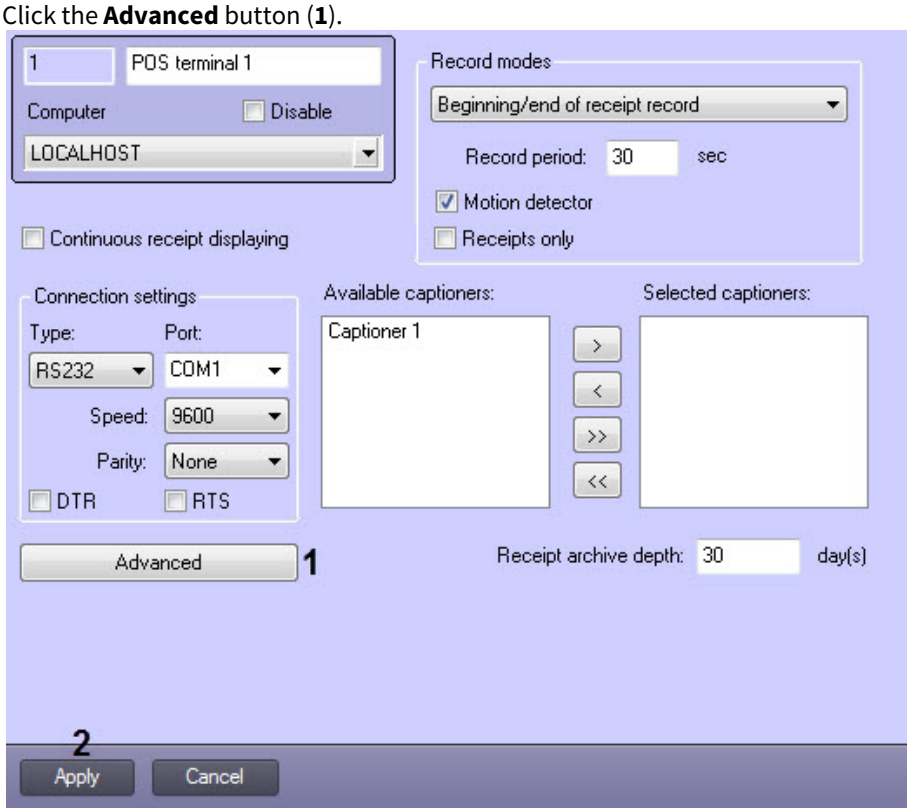
3. Click **Apply** (**4**).

The captioners are now selected.

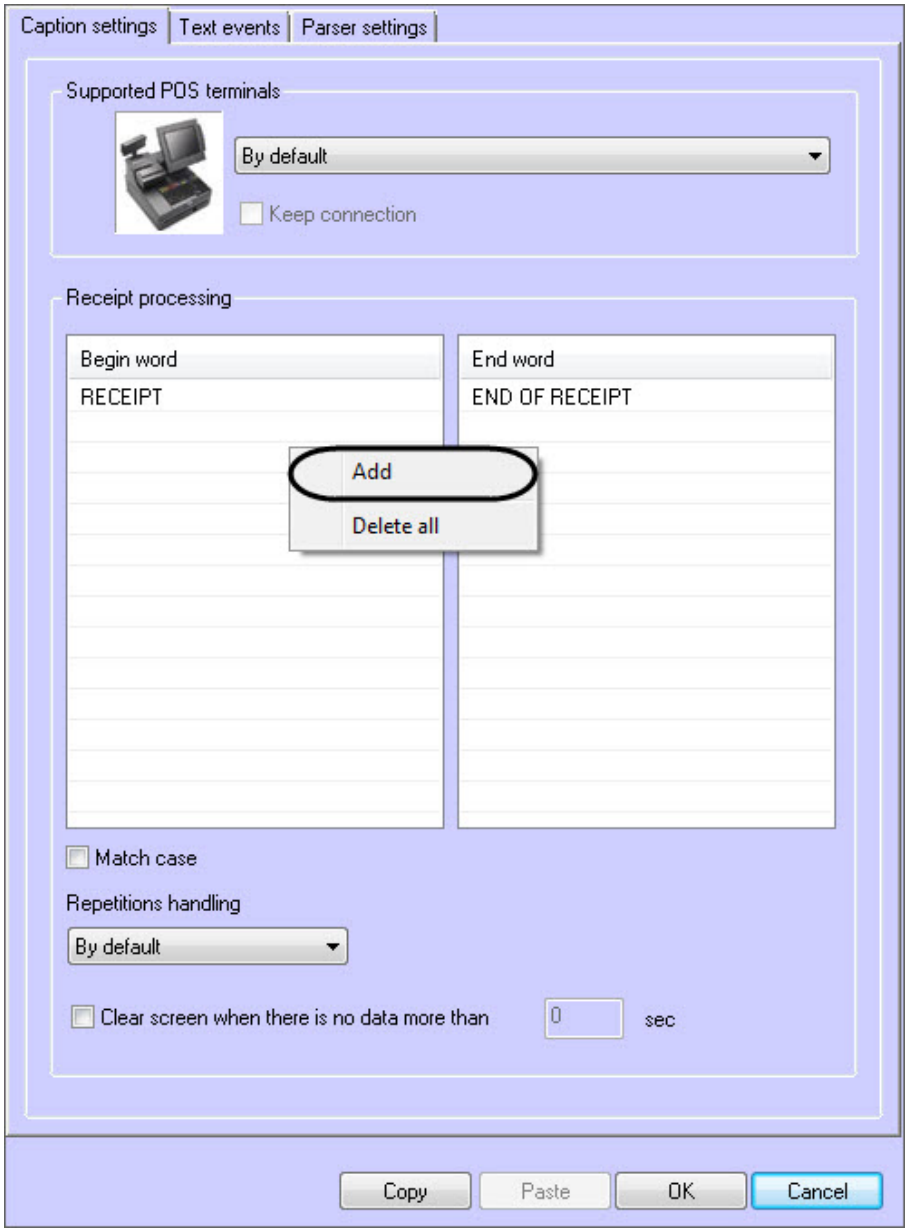
6.3.4 Specifying the receipt processing rules

The receipt processing rules define the beginning and end of a receipt. To specify the rules, do the following:

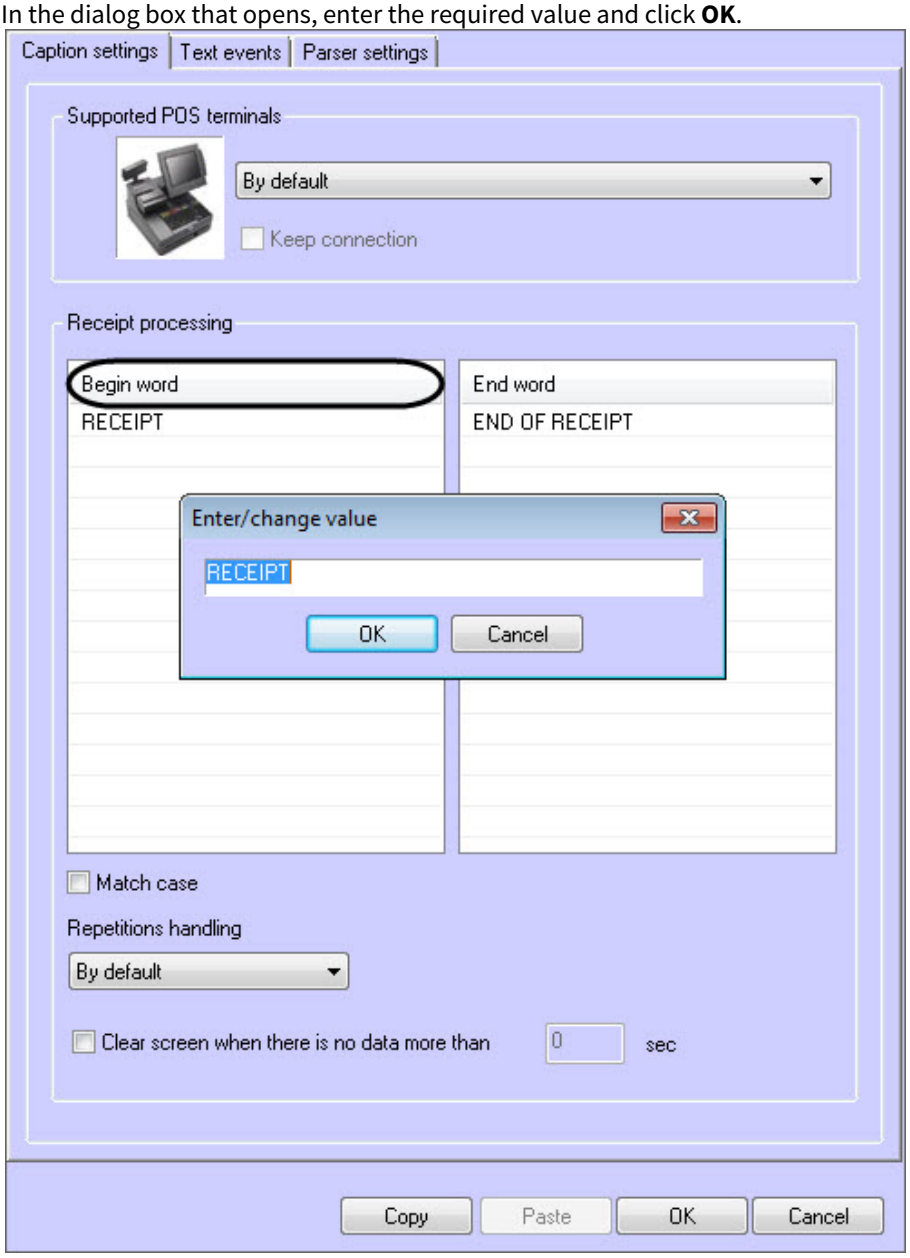
1. Click the **Advanced** button (**1**).



2. Specify the string of characters (words) denoting the beginning of a receipt. Right-click the **Begin word** column to open the drop-down menu, click **Add.**


Caption settings
Text events
Parser settings
Supported POS terminals
By default
Keep connection
Receipt processing
Begin word
End word
RECEIPT
END OF RECEIPT
Add
Delete all
Match case
Repetitions handling
By default
Clear screen when there is no data more than
0
sec
Copy
Paste
OK
Cancel

3. In the dialog box that opens, enter the required value and click **OK**.



The regular expressions can be also used to denote the beginning of a receipt.

> **Note.**
>
> If the configuration of using the regular expressions is to be performed, please, refer the AxxonSoft company.

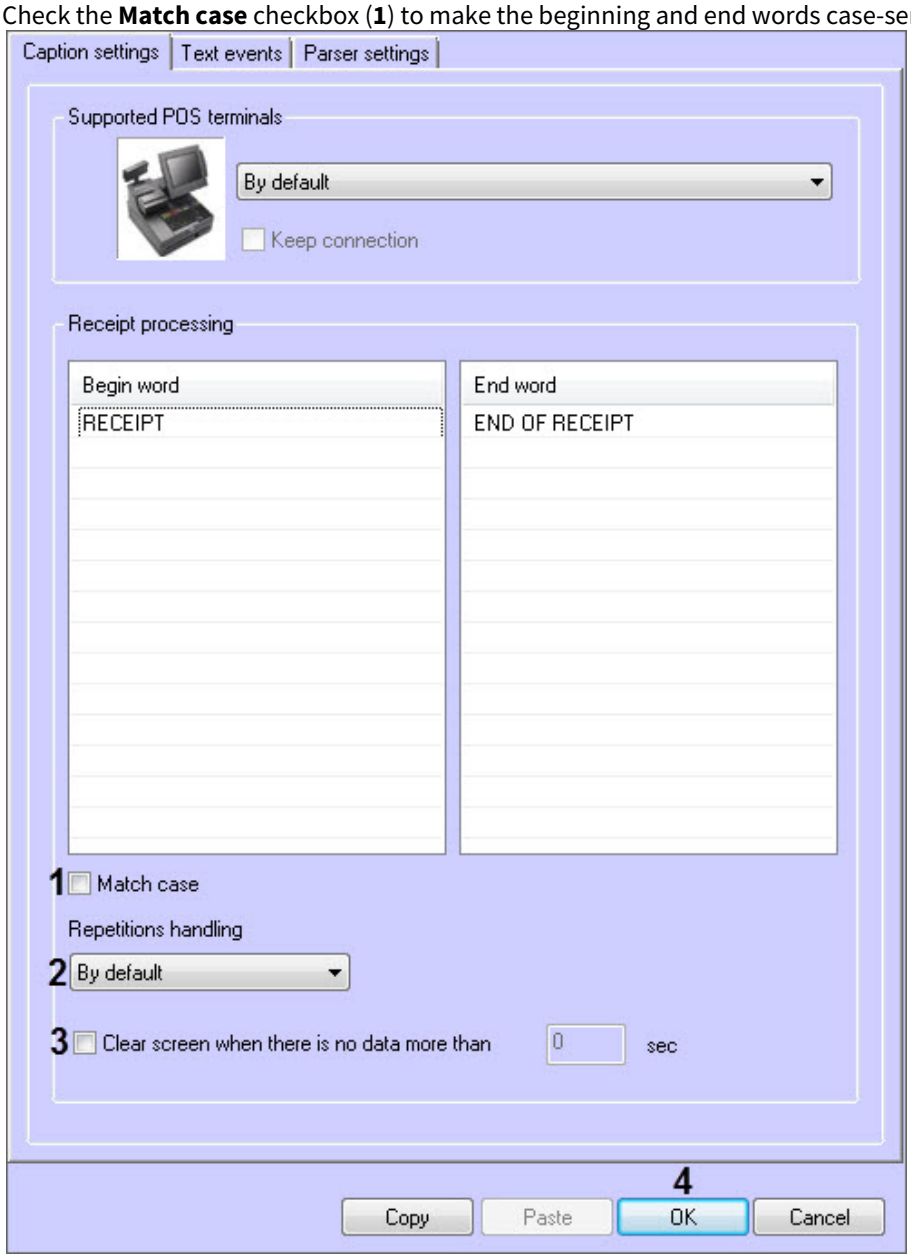
4. Repeat steps 2-3 for all words denoting the beginning of a receipt.

> **Note.**
>
> To modify the words in the table, right-click a word to open the drop-down menu, or use the **Copy** or **Paste** buttons.

5. In the same way, specify the string of characters (words) denoting the end of a receipt. Right-click the **End word** column to open the drop-down menu, click **Add**, then enter the word in the dialog box that opens and click **OK**.
6. Repeat step 5 for all words denoting the end of a receipt.

> **Note.**
>
> To modify the words in the table, right-click a word to open the drop-down menu, or use the **Copy** or **Paste** buttons.

7. Check the **Match case** checkbox (**1**) to make the beginning and end words case-sensitive .



8. In the **Repetitions handling** drop-down list, select the **Ignore repetitions** option to make the system ignore all subsequent receipt beginning words unless the end word of current receipt is received (**2**).

> **Note.**
>
> To recognize the receipts by the beginning word only while ignoring end words, select the **By default** option in the **Repetitions handling** drop-down list.

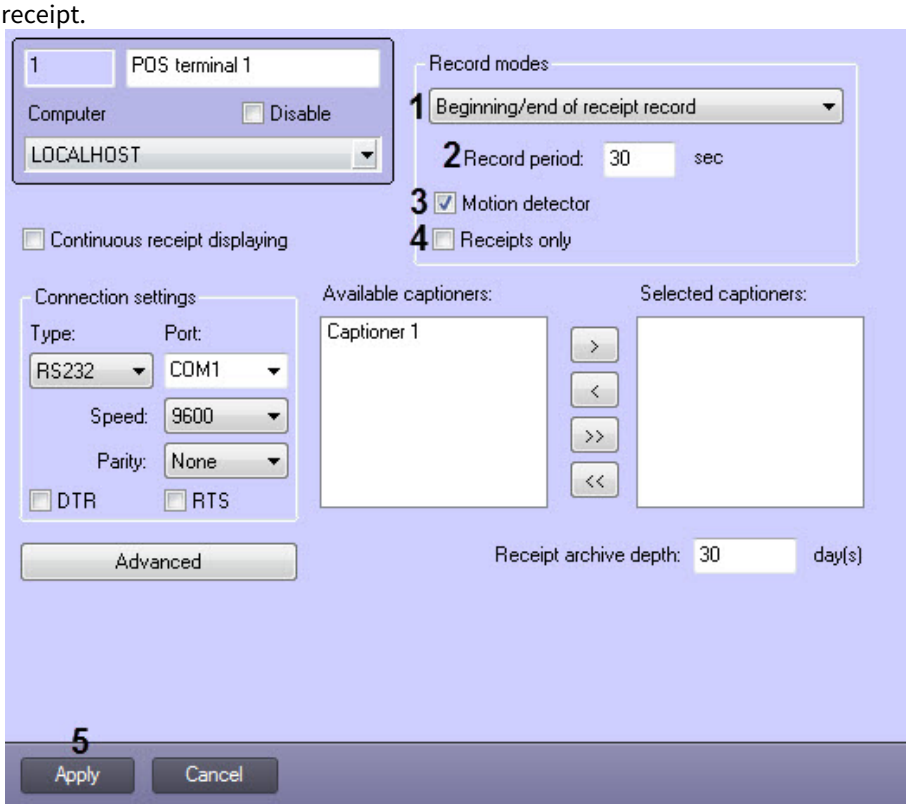
9. To clear the titles display area after a certain amount of time if no data is received, check the **Clear screen when there is no data more than** checkbox, and enter the waiting time (in seconds) in the text field next to it (**3**).
10. Click **OK** (**4**) to close the **Advanced** dialog window.
11. Click **Apply** (**2**) on the **POS terminal** object settings panel .

The receipt processing rules are now specified.

6.3.5 Specifying the video recording parameters

Video recording includes the video image received from the camera overlaid with receipt data. To specify the video recording parameters, do the following:

1. Select the video recording mode in the **Recording modes** drop-down list (**1**). The following modes are available:
   a. **Continuous recording** – video is recorded continuously.
   b. **Beginning/end of receipt record** – video recording starts at the beginning of a receipt and stops at the end.
   c. **Save one frame per receipt** – the video recording contains one video frame for each operation in the receipt.



2. If the **Beginning/end of receipt record** mode is selected, enter the duration of the receipt record in seconds in the **Record period** field. Recording starts after receiving any events from the **POS terminal**, where the beginning and end of the receipt are found between the strings (**2**).

> **Note.**
>
> Record will be performed permanently if the **Record period** is 0 sec.

3. Check the **Motion detector** checkbox to enable the video recording upon a motion detector alarm (**3**).

> **Note.**
>
> It does not make sense to enable recording upon motion detector, if the **Continuous recording** mode is selected.

> **Warning!**
>
> If the recording upon motion detector is enabled, uncheck the **Record alarms** checkbox in all cameras related to the captioners selected in this **POS terminal** (see the Selecting the captioners section). **Record alarms** option in cameras settings is disabled automatically when **Motion detector** option on the **POS terminal** settings panel is applied.

4. Check the **Receipts only** checkbox to include into the captioners the receipt data between the beginning and end word only (**4**).

> **Warning!**
>
> When the **Receipts only** checkbox is activated, but regular expressions of check's beginning and end are not set, recording to the **Captioner** is not performed.

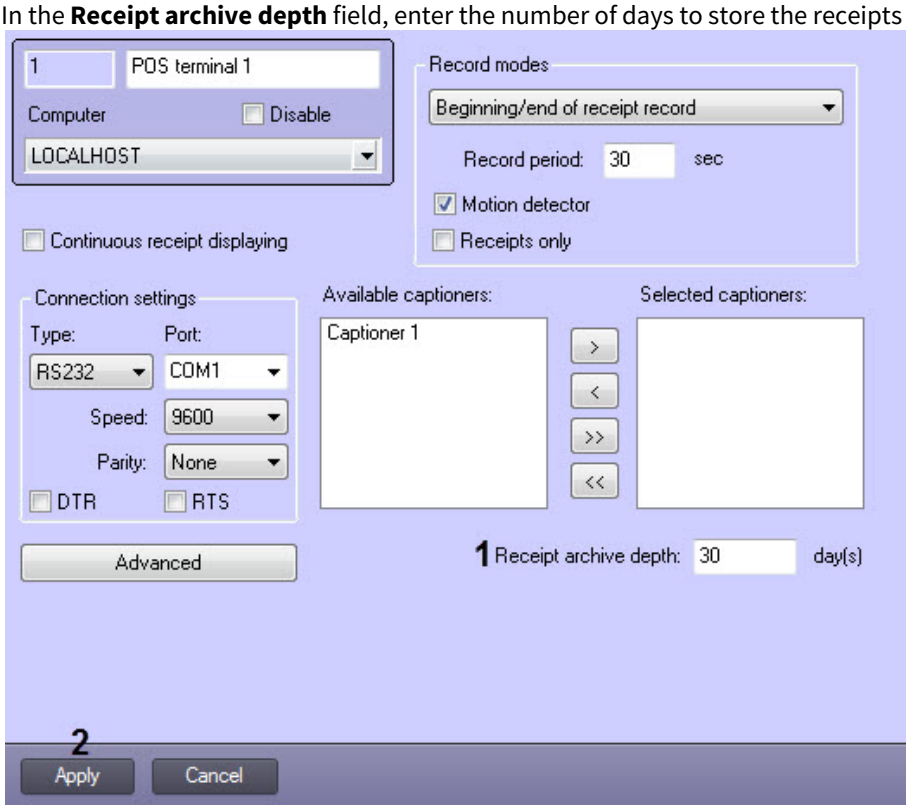
5. Click **Apply** (**5**).

The video recording parameters are now set.

6.3.6 Specifying the receipt archive depth

The receipts archive size limits the size of the receipts database, old receipts are deleted automatically. To set the receipts archive size, do the following:

1. In the **Receipt archive depth** field, enter the number of days to store the receipts (**1**).



2. Click **Apply** (**2**).

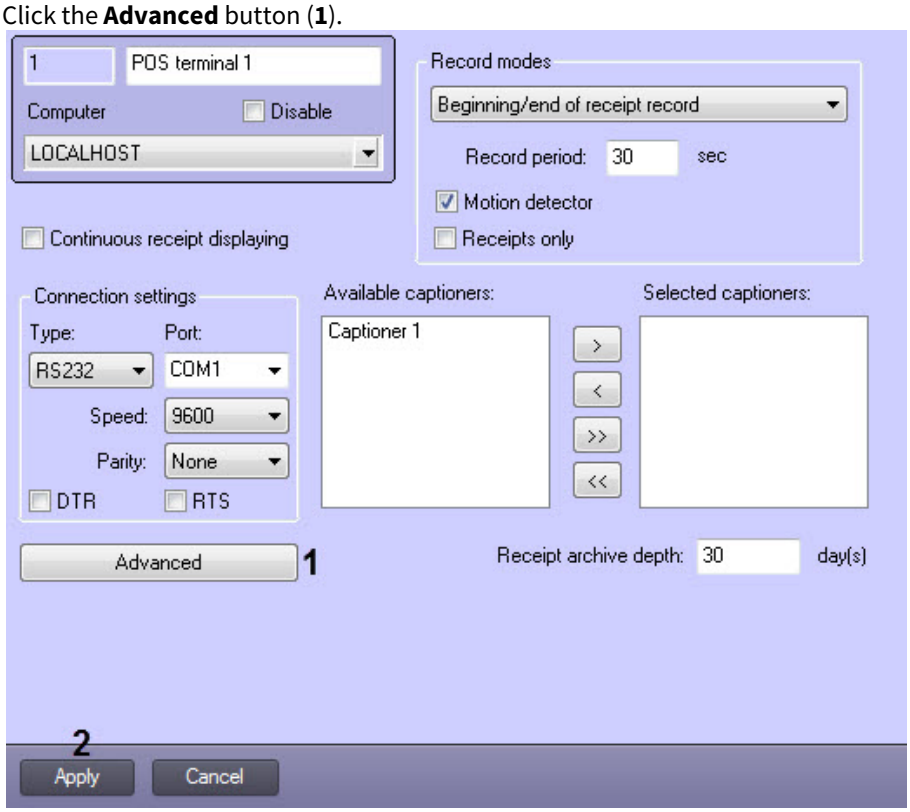
The receipts archive depth is now set.

6.3.7 Specifying the text events rules

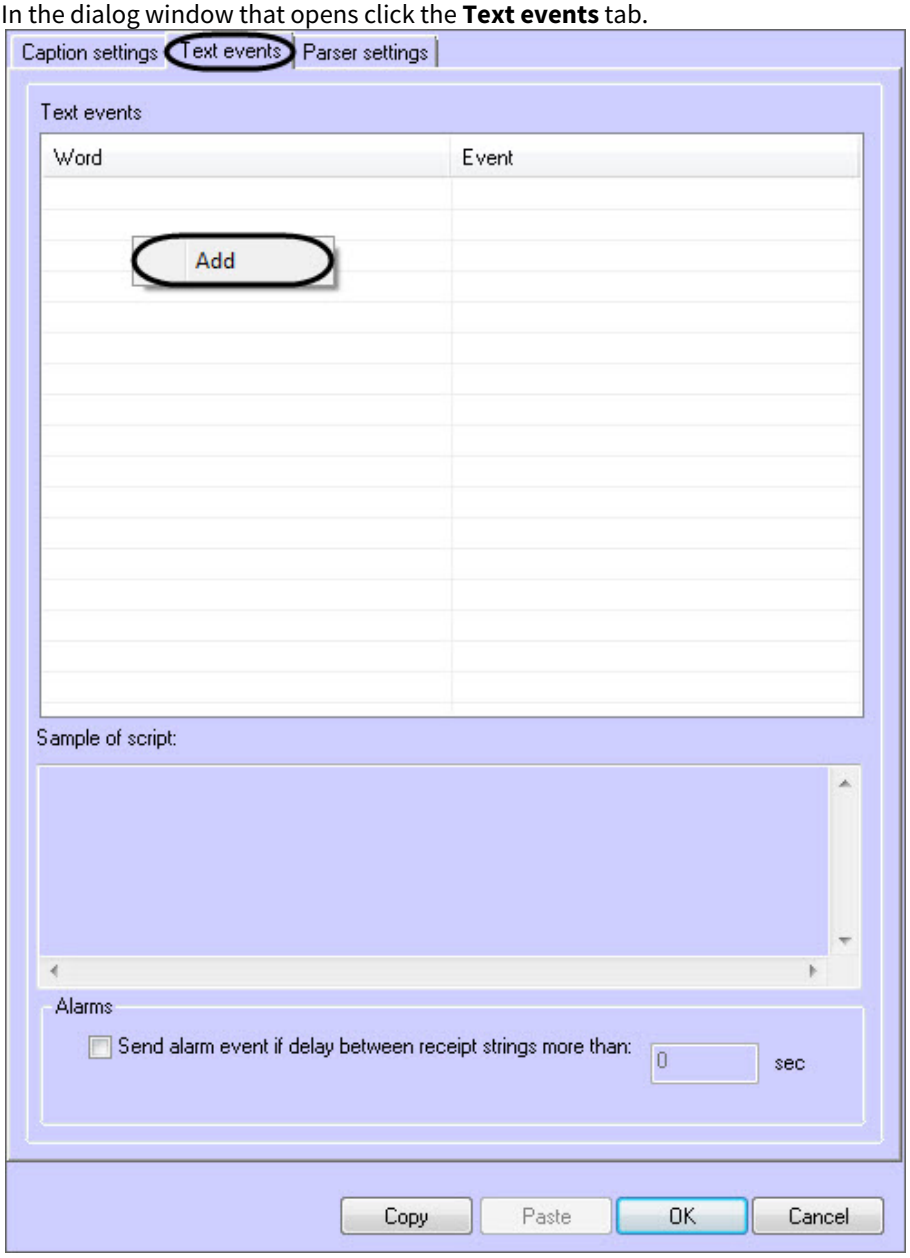
Certain system events can be set to occur upon finding certain words in receipts. This is an optional function in addition to the system setup.

To specify the text events rules, do the following:

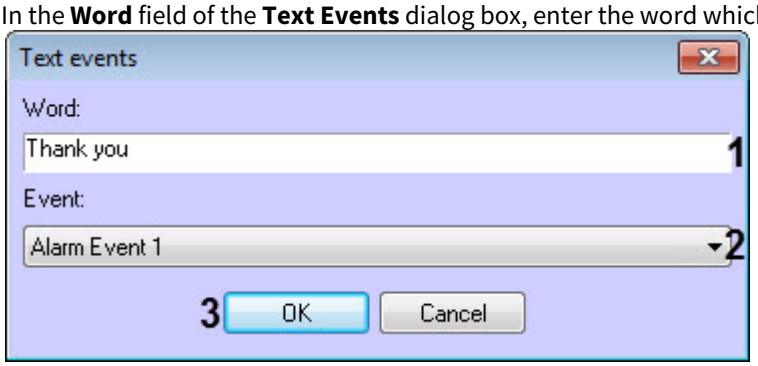
1. Click the **Advanced** button (**1**).



2. In the dialog window that opens click the **Text events** tab.

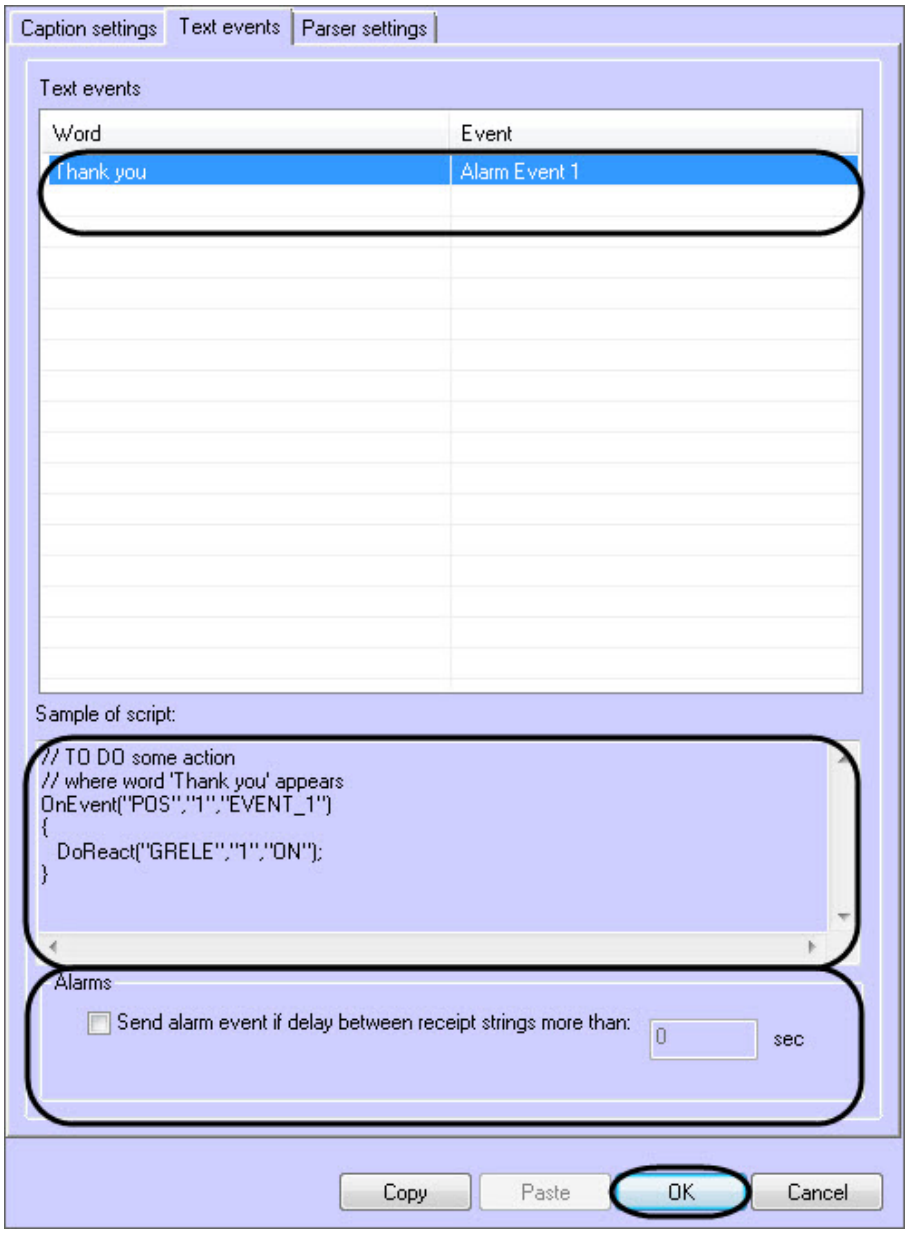


3. Right-click an empty cell in the table and select **Add** in the drop-down menu.
4. In the **Word** field of the **Text Events** dialog box, enter the word which will activate an event (**1**).



5. In the **Event** drop-down list, select the event to be activated (**2**).
   To set up the events, use the Configuration setup utility (ddi.exe) located in the **Tools** folder of the *Axxon PSIM* program folder. Using the ddi.exe utility is described in the *Axxon PSIM* Software Package. The Administrator's Guide document.
6. Click **OK** to save the values and close the **Text events** window (**3**).
7. Repeat steps 2 to 5 for all words and events.

> **Note.**
>
> To modify the words in the table, right-click a word or event to open the drop-down menu, or use the **Copy** or **Paste** buttons.
> Click a line in the table to see the script processing the word/event pair in the **Sample of script** field.



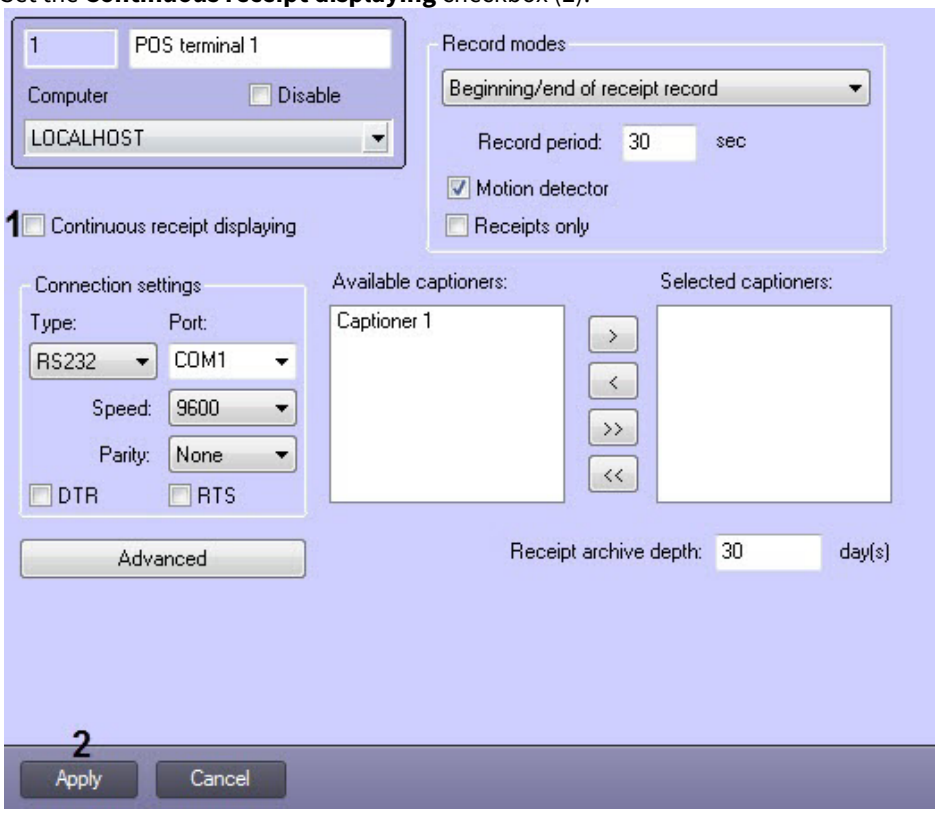
8. To enable generating an alarm if receipt line processing is delayed for more than a certain time interval, check the **Send alarm event if delay between receipt strings more than** checkbox and enter the delay (in seconds) in the field next to it.
9. Click **OK** to close this dialog window.
10. Click **Apply** (**2**) in the **POS terminal** object settings panel.

The text events rules are now set.

6.3.8 Enabling the continuous receipt displaying

Continuous receipt displaying option is designed to put a space between the receipts so that they do not overlap on the screen. If this option is disabled, the previous receipt becomes hidden when a new receipt is displayed. To enable the continuous receipt displaying on the screen, do the following:

1. Set the **Continuous receipt displaying** checkbox (**1**).



2. Click **Apply** (**2**).

Continuous receipt displaying option is enabled.

6.3.9 Setting up the parser (optional)

Parser types

The data is added to the receipts database using the parser which processes the receipts. This is an optional function in addition to the system setup.

Note.

> The user can create structured queries on the receipts database (see the Editing the receipts database queries (optional) section).

Depending on the protocol of data transfer from the POS-terminal to the POS-server, the database can be filled up:

1. using the xml_titles.txt parser;
2. using a .prl parser.

The xml_titles.txt parser specifies the rules for adding data to the receipts database if the data is transferred from the POS-terminal to the POS-server using the XML protocol. The parser contents depend on the structure of the XML data. To use the xml_titles.txt parser, the parser file should be located in the **<*POS PSIM* program folder>\Modules\Pos** folder.

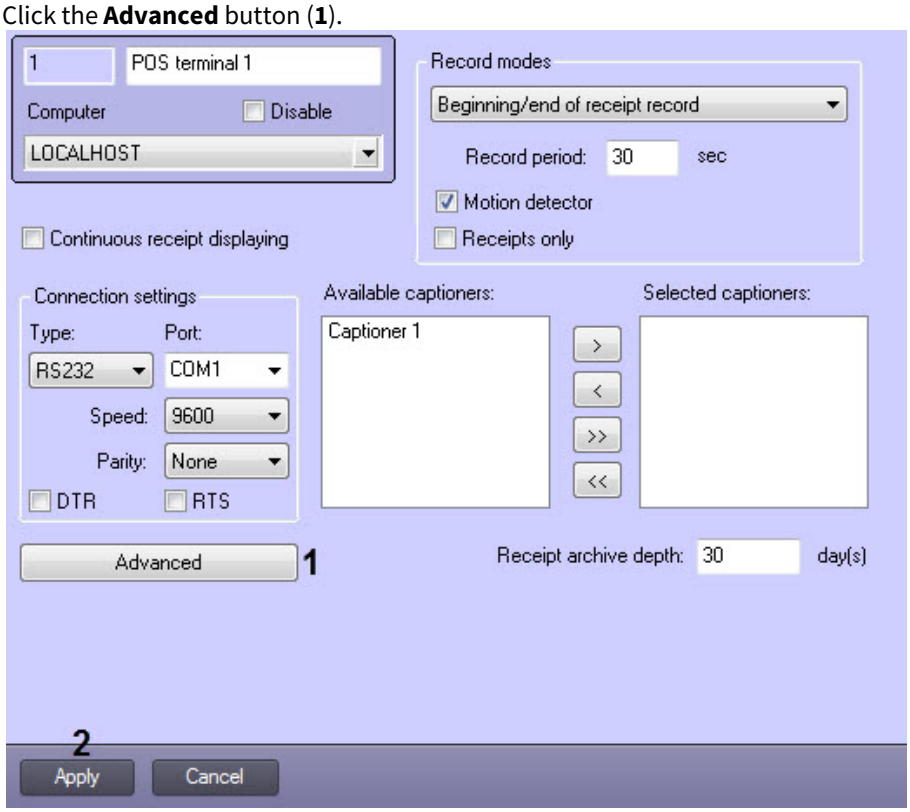
If the POS-terminals connected to the POS-server have the same XML data structure, common xml_titles.txt file can be used. If the POS-terminals connected to the POS-server have different XML data structures, a separate parser should be created for each terminal. The parsers should have files of the **xml_titles_N.txt** form, where N is the number of the corresponding POS-terminal object.

The .prl parser specifies the rules for adding data to the receipts database if the data is transferred from the POS-terminal to the POS-server using a protocol other than XML. The parser contents depends on the POS-terminal data structure. To use a .prl parser, its file should be imported into the system.

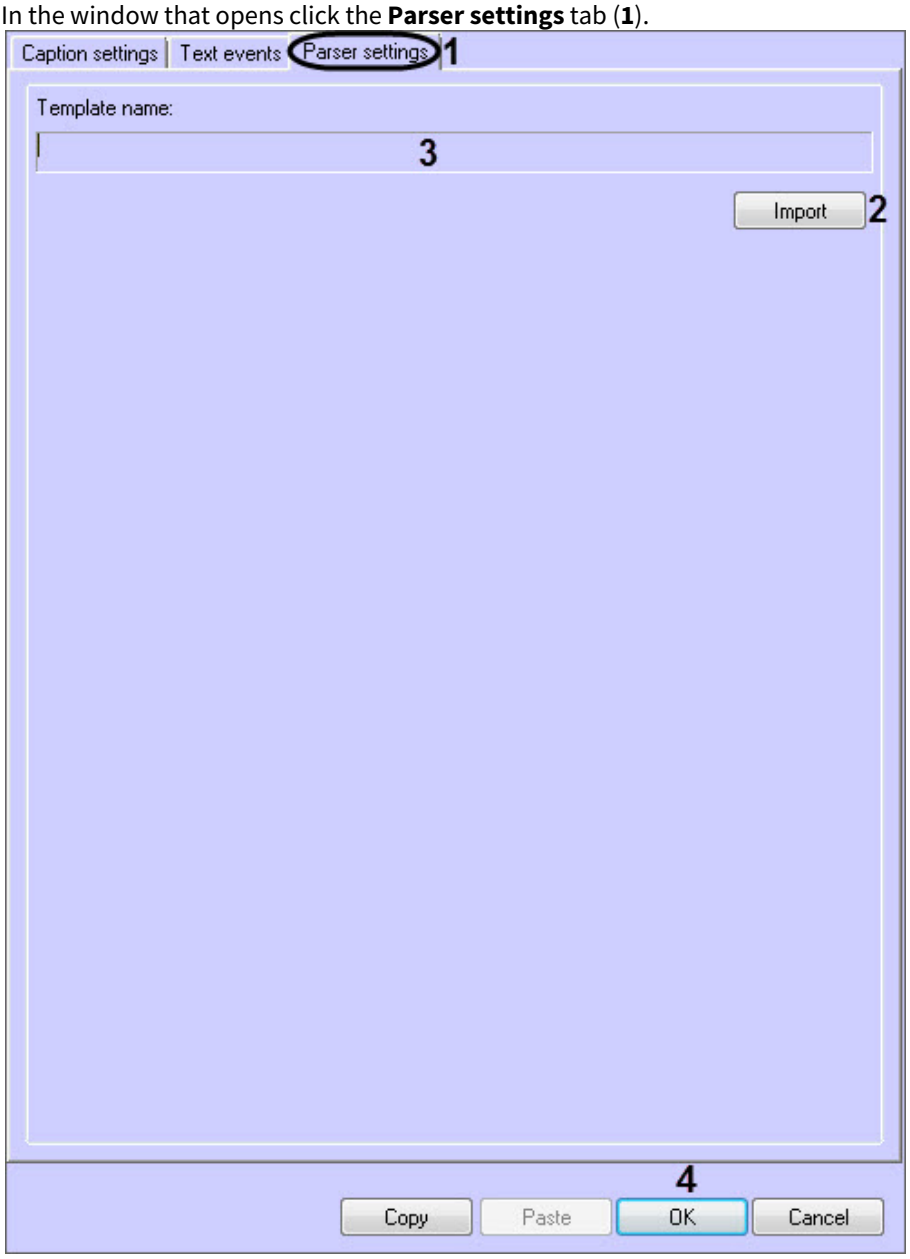
Import of .prl parser

To import a .prl parser, do the following:

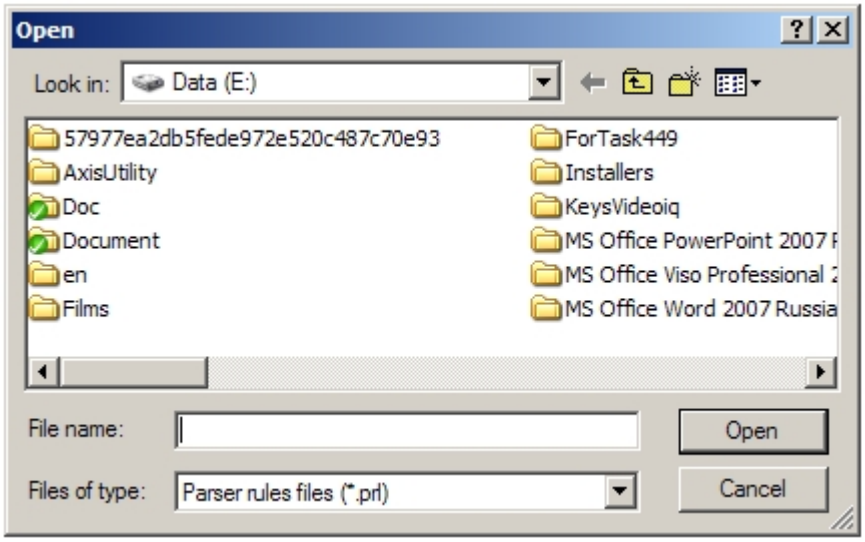
1. Click the **Advanced** button (**1**).



2. In the window that opens click the **Parser settings** tab (**1**).



3. Click the **Import** button (**2**) and select the parser file in the standard Windows file open dialog box.



4. In case of successful import, the name of the template is displayed in the **Template name** field (**3**).
5. Click **OK** to close the **Advanced** window (**4**).
6. Click **Apply** (**2**) in the **POS terminal** object settings panel.

The .prl parser has been imported.

Editing the .prl parser

To edit the.prl parser follow two stages:

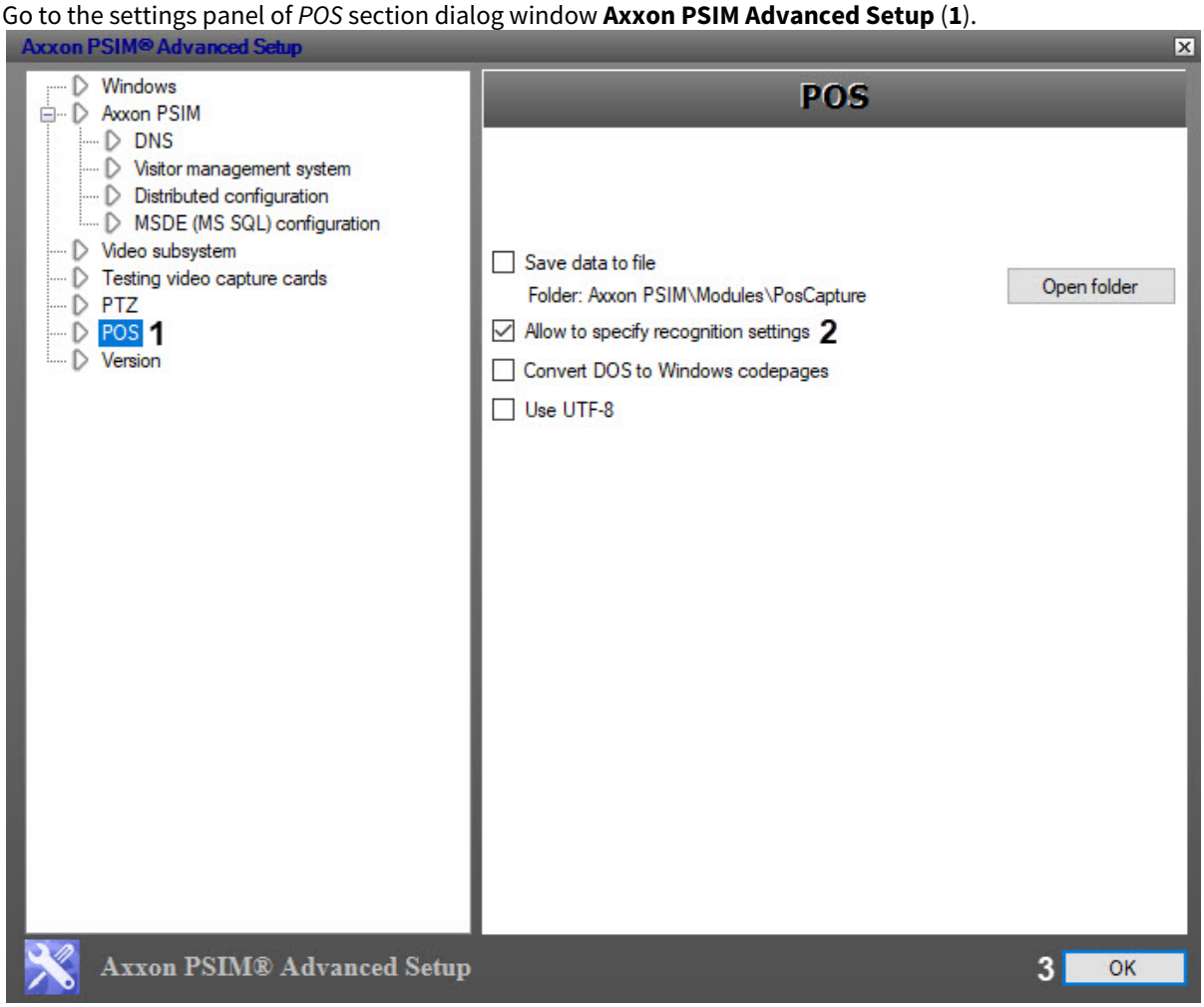
1. Enable the displaying of edit parser panel
2. Set the rules of receipts structuring on the settings panel

To the Enable the displaying if edit parser panel do the following steps:

1. Run the utility Extended settings tweaki.exe from the Start menu OS Windows: Start -> Programs -> Axxon PSIM -> Advanced settings utility. **Axxon PSIM Advanced setup** dialog window will open in result.

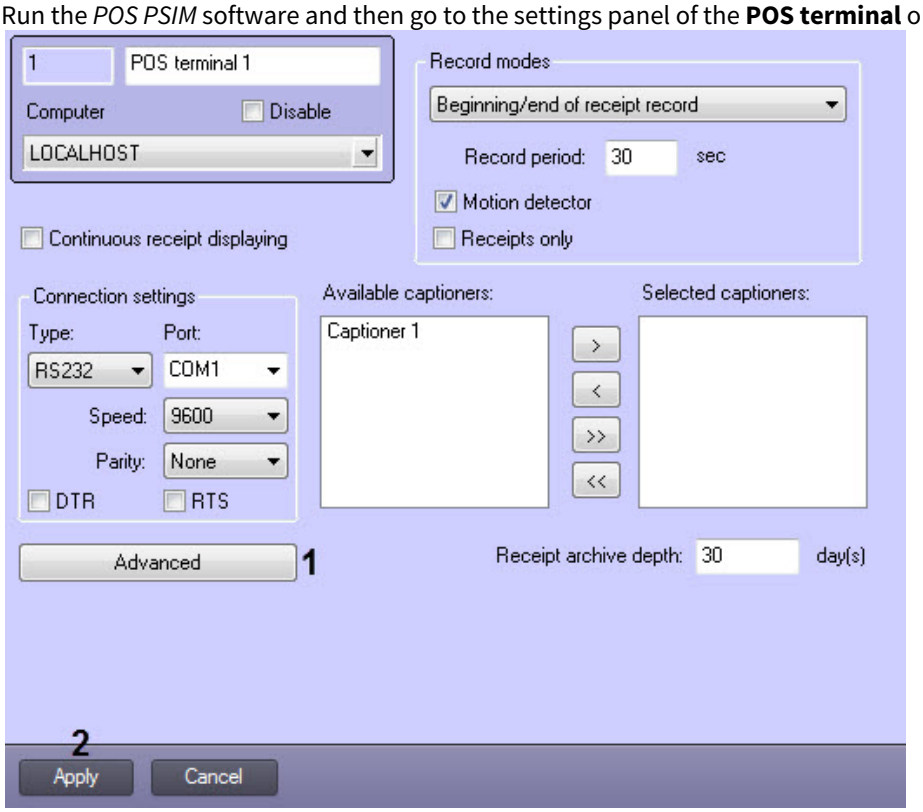
> **Note.**
>
> The utility can also be run from **Tools** folder of *POS PSIM* install catalog: <*POS PSIM* installation directory>\Tools\tweaki.exe. Detailed description of work with tweaki.exe utility is given in the Axxon PSIM software: Administrator guide documentation

2. Go to the settings panel of *POS* section dialog window **Axxon PSIM Advanced Setup** (**1**).

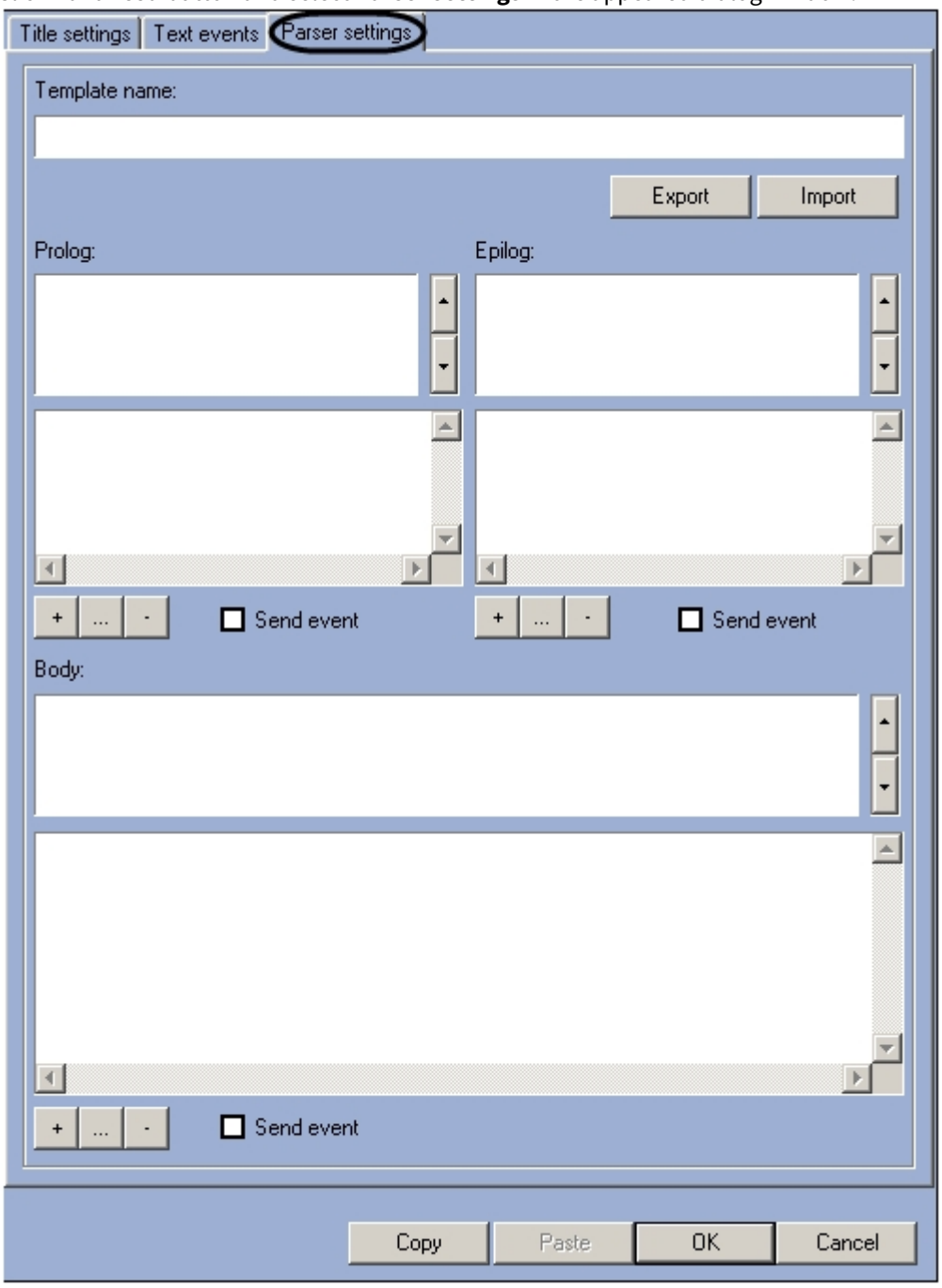


3. Set the checkbox **Allow to specify recognition settings** to display edit parser panel (**2**).
4. Click **OK** to save the changes and quit tweaki.exe utility (**3**).

5. Run the *POS PSIM* software and then go to the settings panel of the **POS terminal** object



6. Click **Advanced** button and select **Parser settings** in the appeared dialog window.



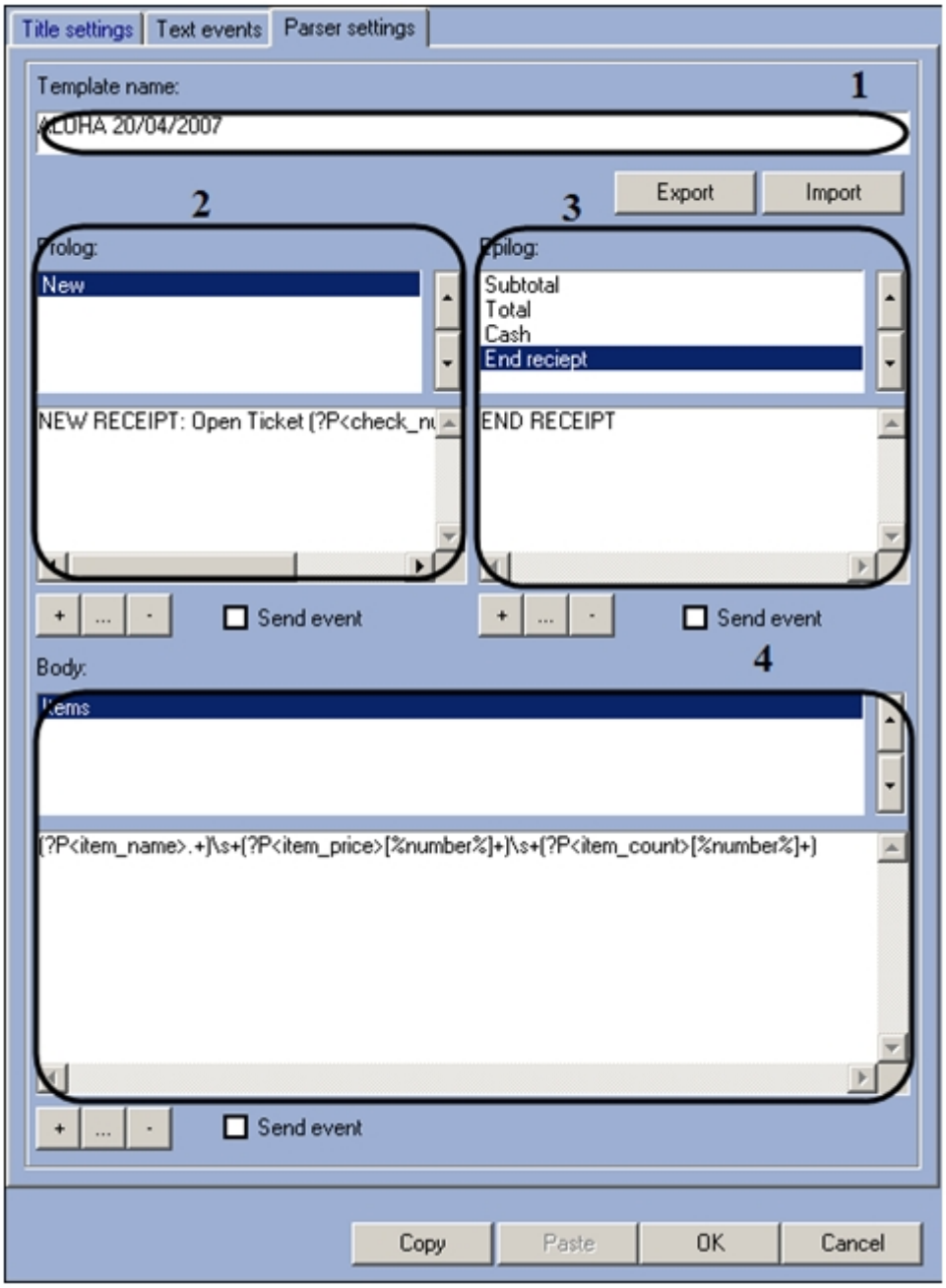
7. Parser settings tab will be displayed in result

Displaying the **Parser settings** tab is completed.

Parser settings panel may be used both for editing and creating the parser. Settings group on the on the parser settings panel are shown in the figure.

Note.

Preliminary import with the help of Import button is necessary to edit the parser. Parser import order is identical to that one, described in .prl parser import.



Description of settings group on the edit parser panel is given in the table.

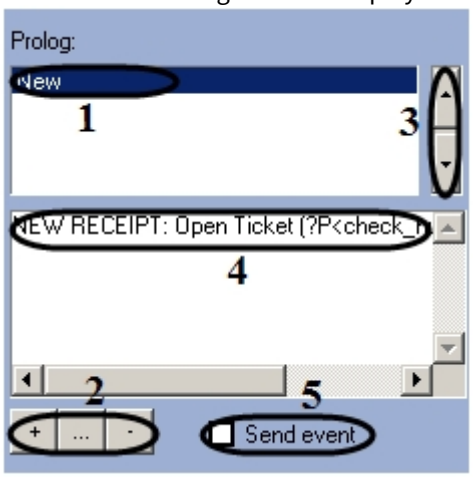
№	Group	Description
1	Template name	Set the descriptive parser name

№	Group	Description
2	Prolog	Set the rules of receipt structuring while fulfilling receipt's databases
3	Epilog	Set the rules of receipt's end structuring while fulfilling receipt's databases.
4	Body	Set the rules of receipt's body structuring while fulfilling receipt's databases.

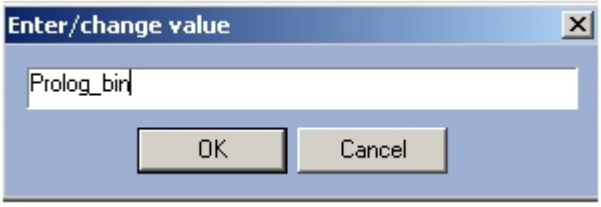
Groups 2-4 have the same set of user interface elements.

Editing the data structuring rules in groups 2-4 is done in the following way:

1. Names of structuring rules are displayed in the first list



2. If it is necessary to add a new rule to the first list, click + (1-2). Enter the name of the new rule in the opened **Enter/change value** dialog window and then click **OK**



3. If it is necessary to edit the name of the rule, select the name of this rule and click ... (1-2). Set a new name of the rule in the opened dialog window **Enter/change value** and then click **OK**.

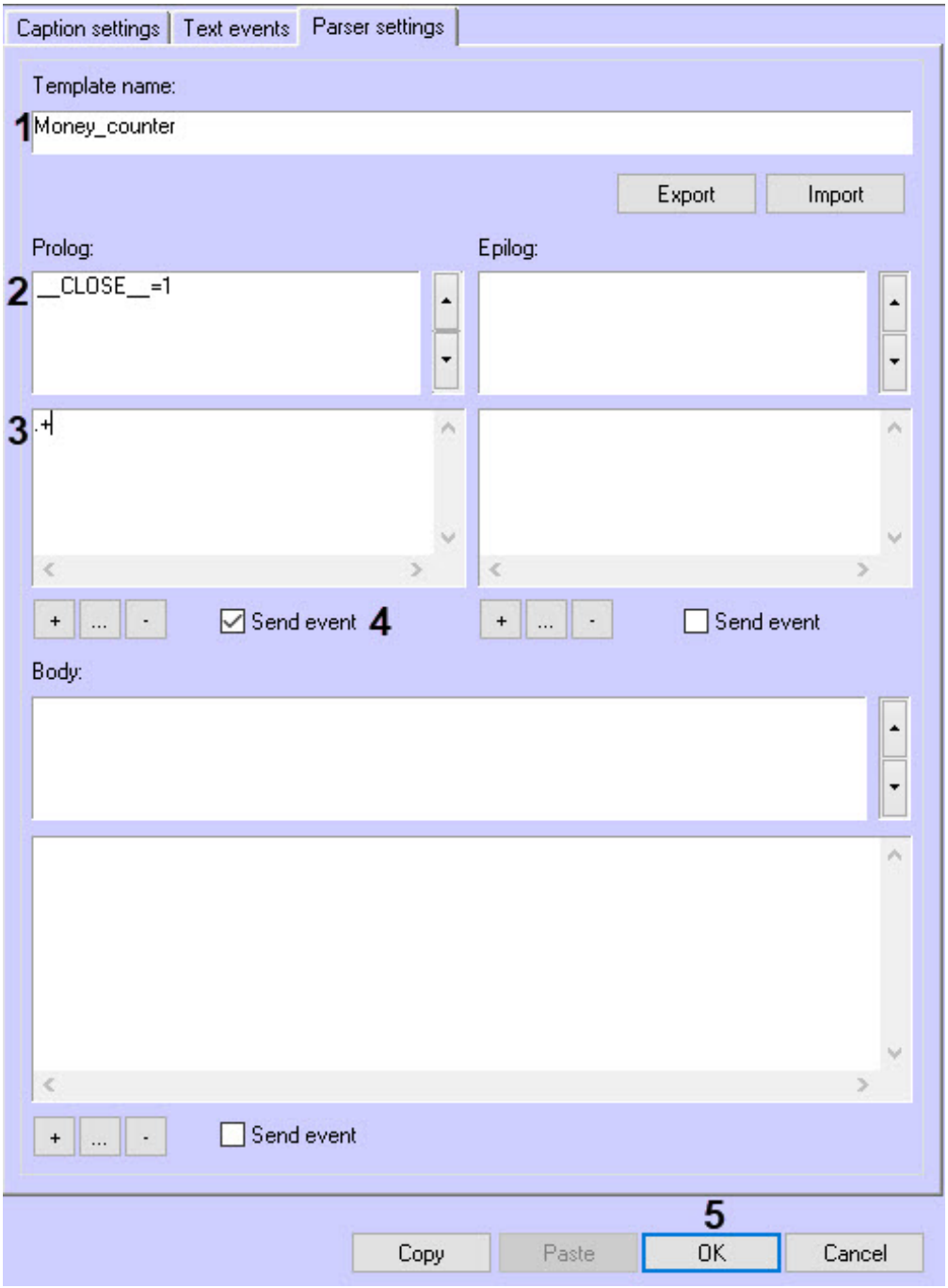
> **Note.**
>
> Instead of ... button, you can double-click on the name of the rule.

4. If it is necessary to delete the rule, select the name of the rule in the first list and click - button(1-2)

5. If it is necessary to move the name of the rule upwards, click  ;  - to be moved downwards (3)
6. Select the name of the rule in the first list and then enter the required changes in the field 4 to create/edit the text of the structuring rule (Figure 6.3—45, 4)
7. If it is necessary to send the message about registration of the given receipt to POS-server, set the **Send event** checkbox (Figure 6.3—45, 5)
8. Repeat steps 1-7 for all the required setting groups on the edit panel

Editing the data' structuring rules in groups 2-4 is completed.

To configure the parser when data is received only about the beginning of a receipt, do the following:

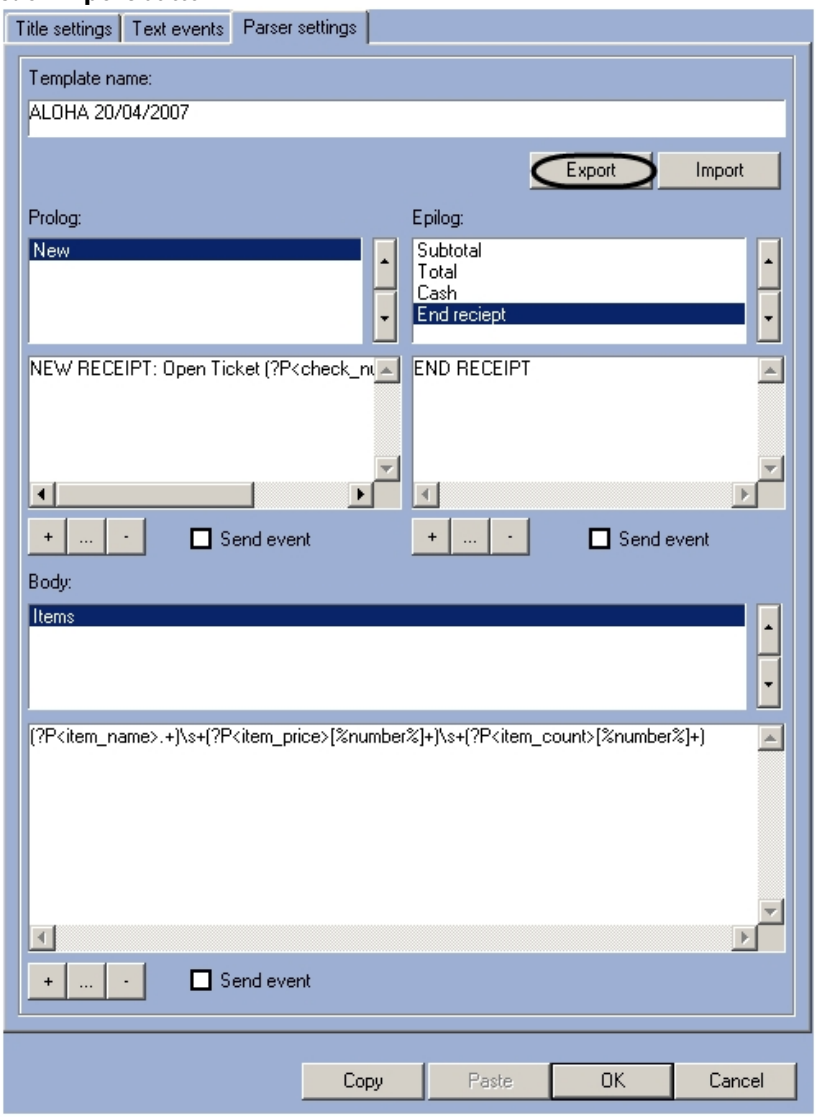


1. Enter the template name in the **Template name** field (**1**).
2. In the rule name area of the **Prolog** field (**2**), enter the value __CLOSE__=1, using a double underscore before and after the word CLOSE.
3. In the check structuring rules area (**3**), enter the value **.+** (**point plus**).
4. Set the **Send event** checkbox (**4**).
5. Press the **OK** button (**5**).

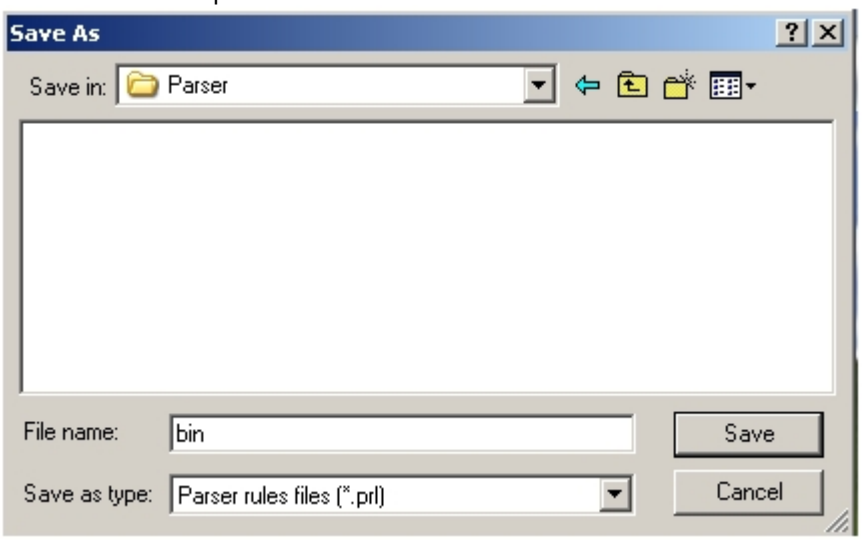
Setting up the parser when receiving data only about the beginning of the check is completed.

To export structuring rules to the parser file do the following:

1. Click **Export** button



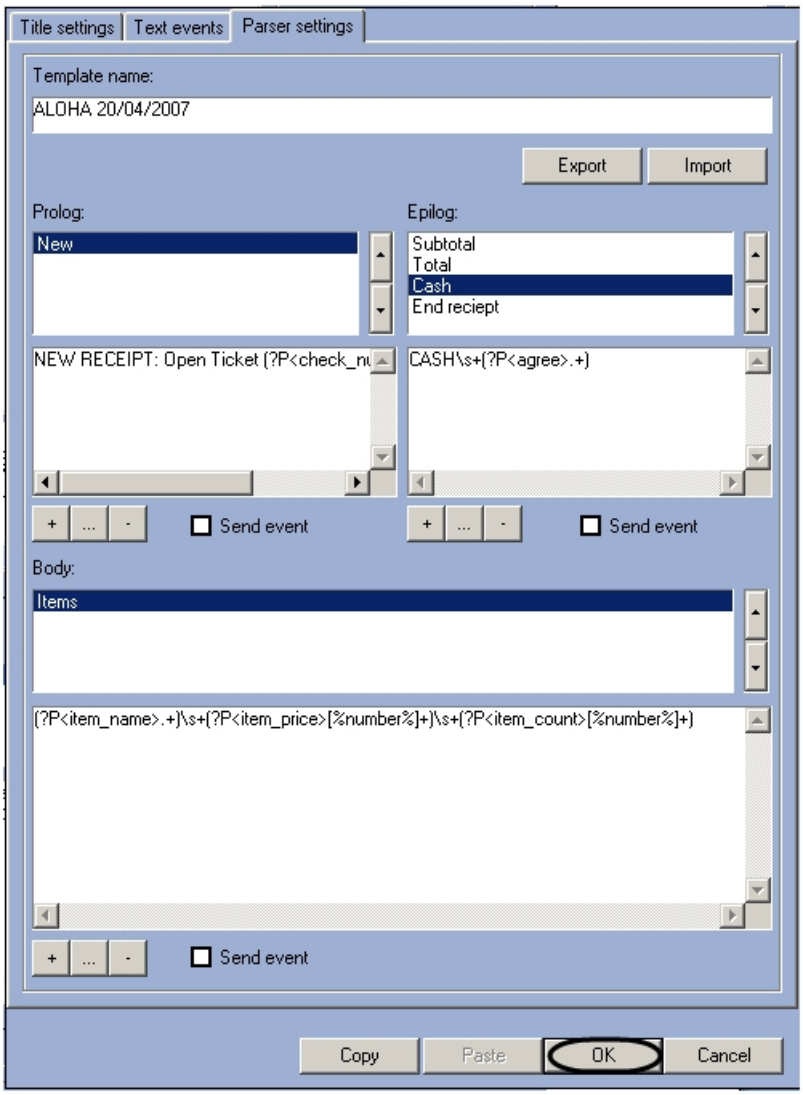
2. In the standard Windows **Save as** dialog box that appears, enter a file name, select a folder, and save the parser file with the .prl extension.



Exporting the structuring rules to the parser file is completed.

> **Note.**
>
> **Copy** and **Paste** buttons are very convenient for moving the structuring rules to other **POS terminal** objects, registered in the system.

Click **OK** to save the changes and close the **Advanced** window.



Cick **Apply** on the **POS terminal** object's settings panel (**2**).

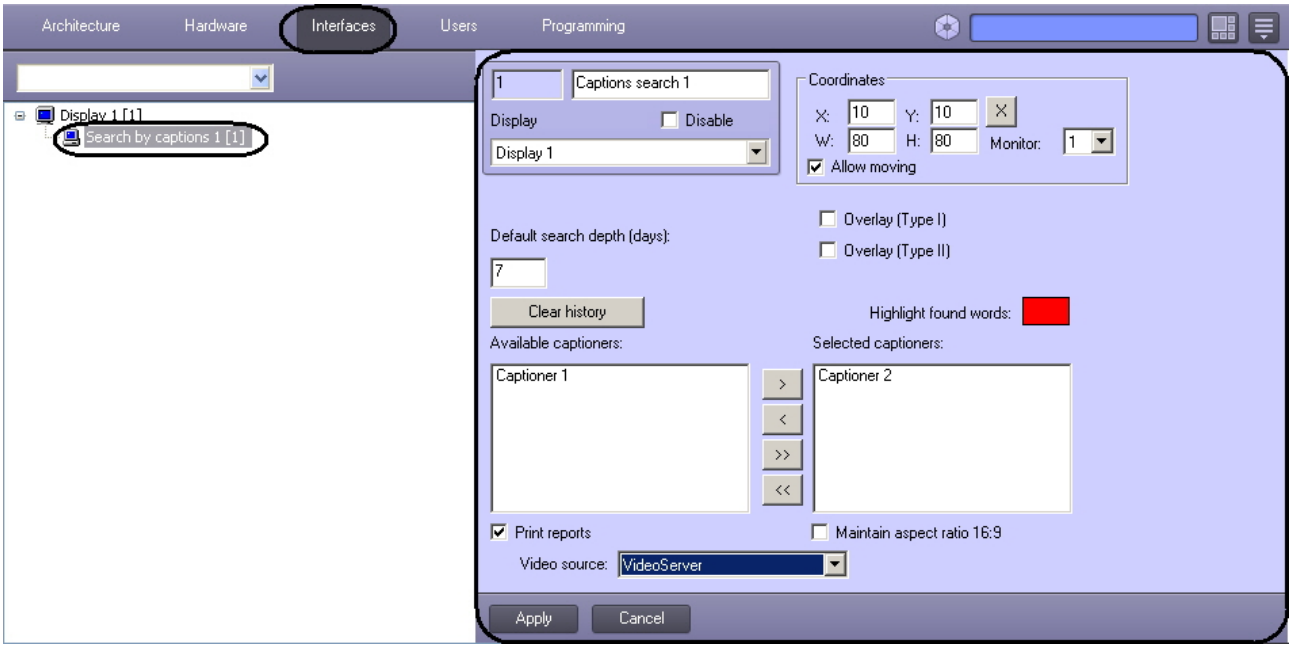
Editing the.prl parser is complete.

6.4 Setting up the Search by captions window

6.4.1 The Search by captions window setup procedure

The **Search by captions** object is a child of the **Screen** object; it is used for creating user queries on the titles database.

To create and set up the **Search by captions** object, use the **Interfaces** tab in the **System Settings** window.



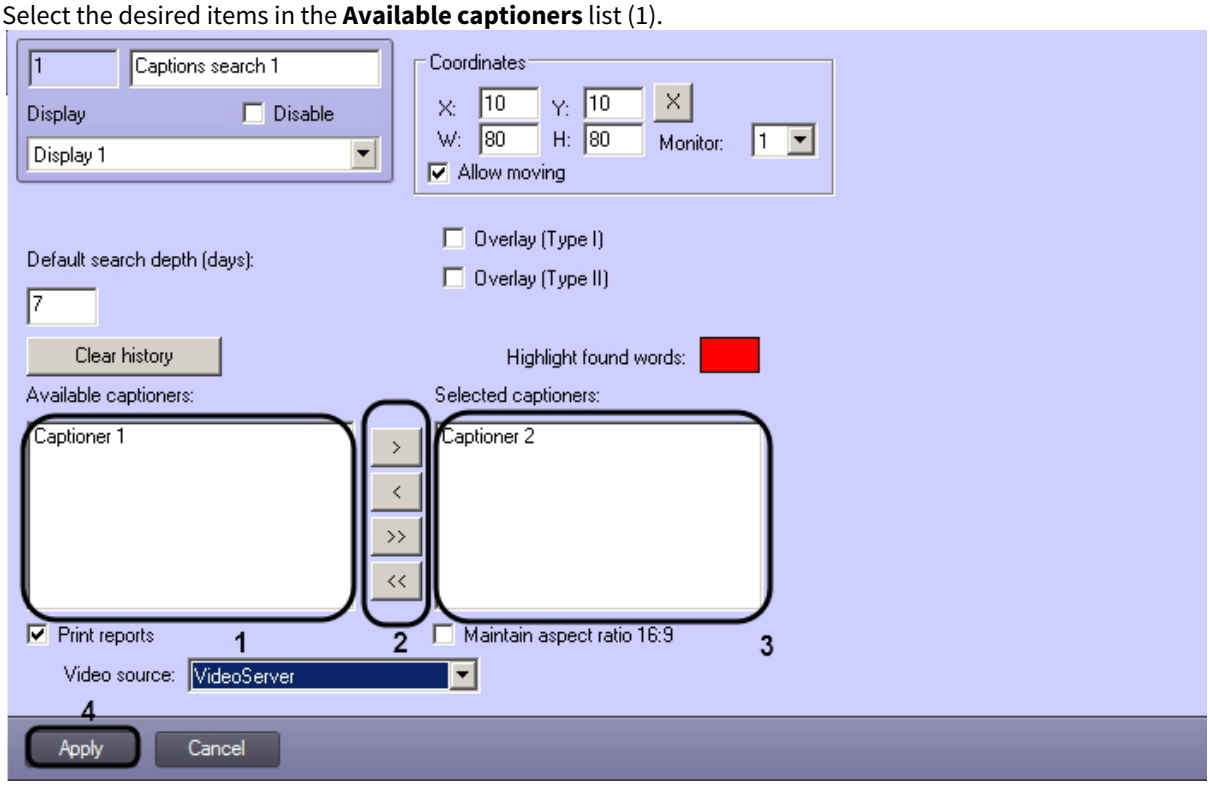
The **Search by captions** object setup includes the following steps:

1. Select the captioners
2. Specify the search criteria
3. Set up the **Search by captions** window

6.4.2 Selecting the captioners for search by captions

Select the captioners to be used for searching the data. To select the captioners, do the following:

1. Select the desired items in the **Available captioners** list (1).



2. Click the > button to move the selected captioners, or the >> button to move all captioners from the list of available captioners to the **Selected captioners** list (2,3).

> **Note.**
>
> Alternatively, the < and << buttons are used to remove the selected or all captioners from the **Selected captioners** list.

3. Click **Apply** (4).

The captioners are now selected.

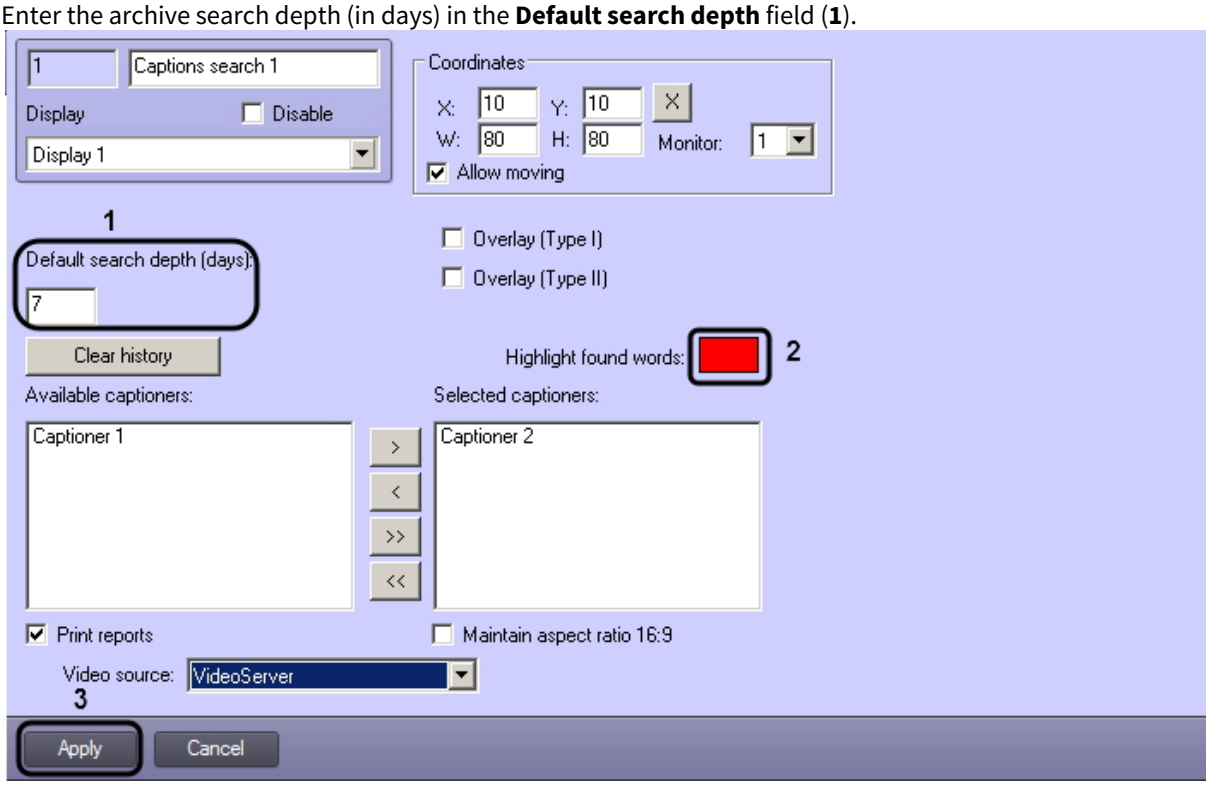
6.4.3 Specifying the captioners search criteria

To set up the captioner search, the following parameters should be specified:

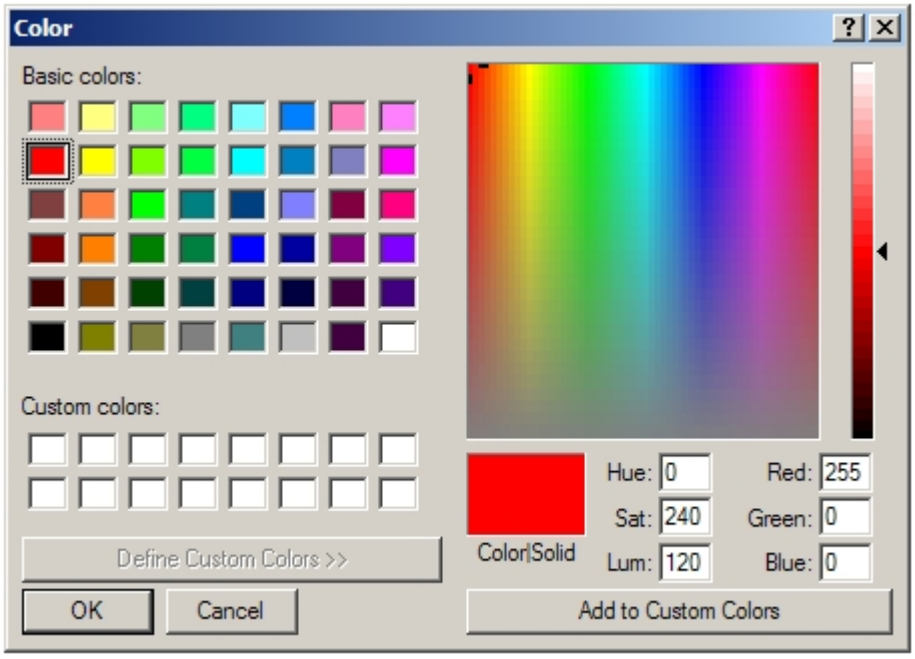
1. Search depth – the captioner search depth.
2. Highlighting a found word – the option for highlighting the found words in the search results.

To specify the captioner search criteria, do the following:

1. Enter the archive search depth (in days) in the **Default search depth** field (**1**).



2. To enable highlighting of found words, double-click the **Highlight found words** color box and select the color in the standard Windows color selection box that opens (**2**).



3. Click **Apply** (**3**).

The captioner search criteria are now set.

6.4.4 Setting up the Search by captions window display

To set up the **Search by captions** window, the following parameters should be specified:

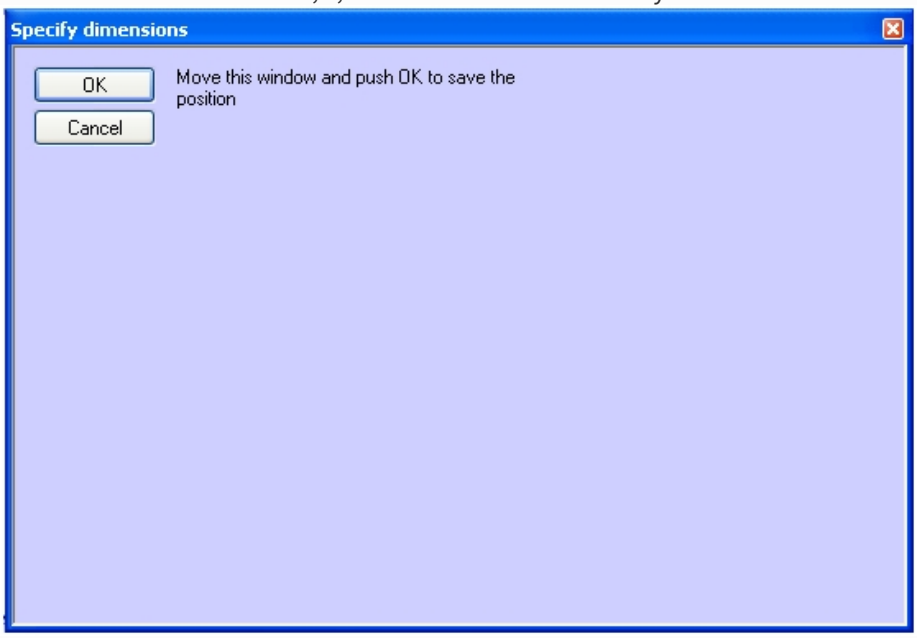
1. Coordinates – the position and size of the window.
2. Monitor – the monitor for displaying the captioner search window.
3. Overlay type – the type of the overlay of the synchronous display of video image and search results.
4. Print reports – the user can print the search results.
5. Video source – the source of the video for search.

To set up the **Search by captions** window, do the following:

1. Specify the position and size of the **Search by captions** window: **X** is the indent relative to the left border of the video image, **Y** is the indent relative to the top border of the video image, **W** is the window width, **H** is the window height. (**1**)

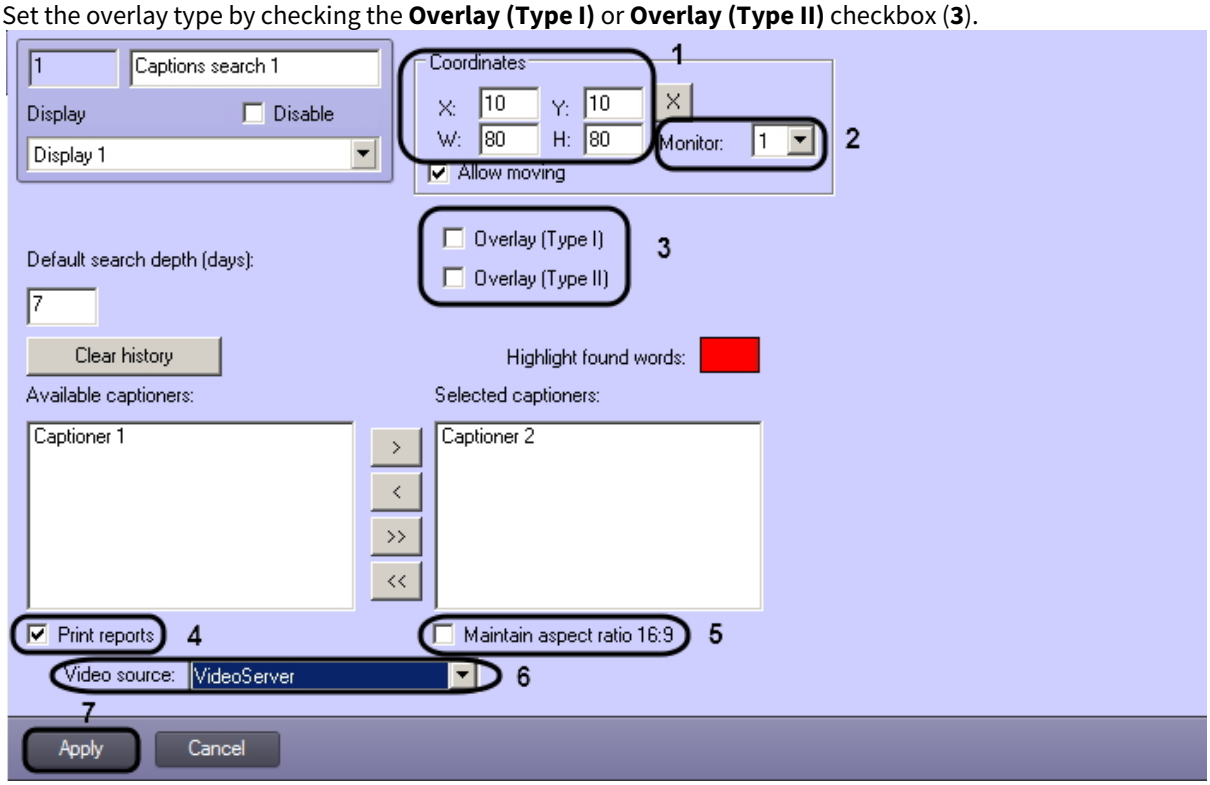
   Note.

   The coordinates can be set up using the visual method. Click the  button and use the mouse to set the location and size of the sample window, then click **OK**. The coordinates of the sample window will be filled in the X, Y, W and H fields automatically.

2. Select the monitor to display the **Search by captions** window from the **Monitor** drop-down list (**2**).

3. Set the overlay type by checking the **Overlay (Type I)** or **Overlay (Type II)** checkbox (**3**).

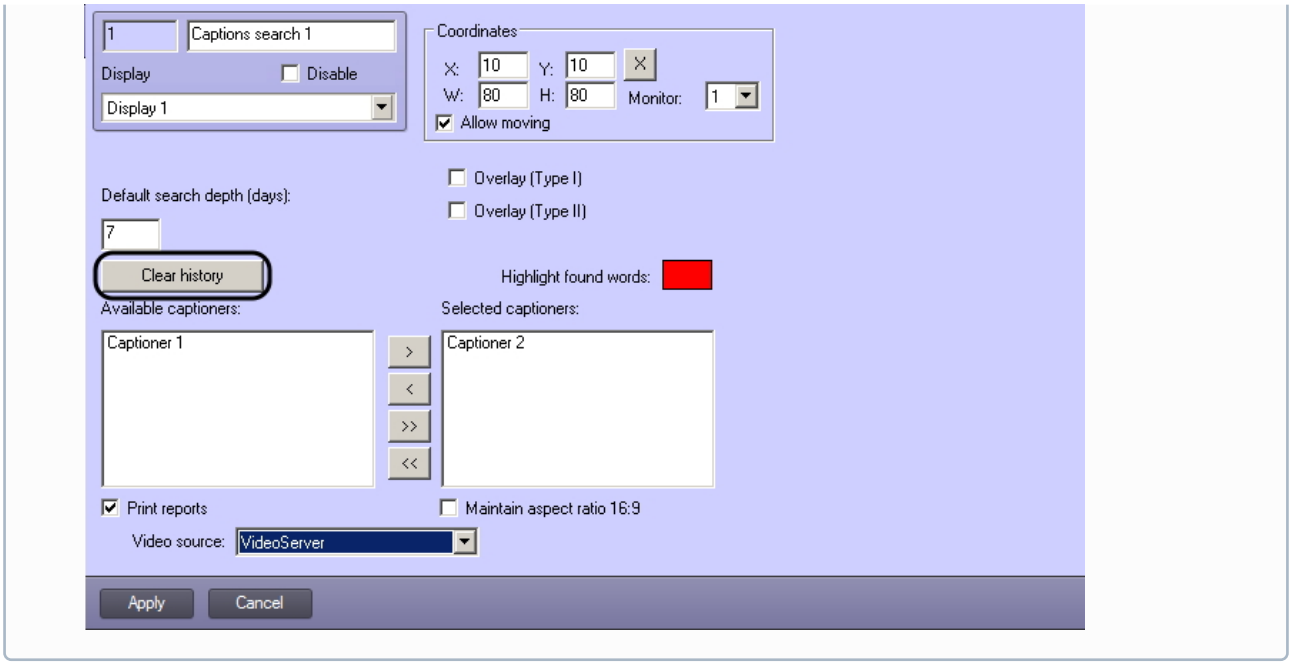


> **Note.**
>
> As a rule, optimal mode of processing the video is Overlay (Type II). If this mode is not supported by video card, Overlay (Type I) should be selected or the Overlay should be completely disabled.

4. To allow the operator to print the search results, check the **Print reports** checkbox (**4**).
5. Set the **Maintain aspect ration of 16:9** to display the archive in 16:9 format (**5**).
6. Select the available video source from the **Video source** drop-down list (**6**).
7. Click **Apply** to save the changes (**7**).

The **Search by captions** window is now set.

> **Note.**
>
> To clear the history of user queries in the Search by captions window, click the **Clear history** button.

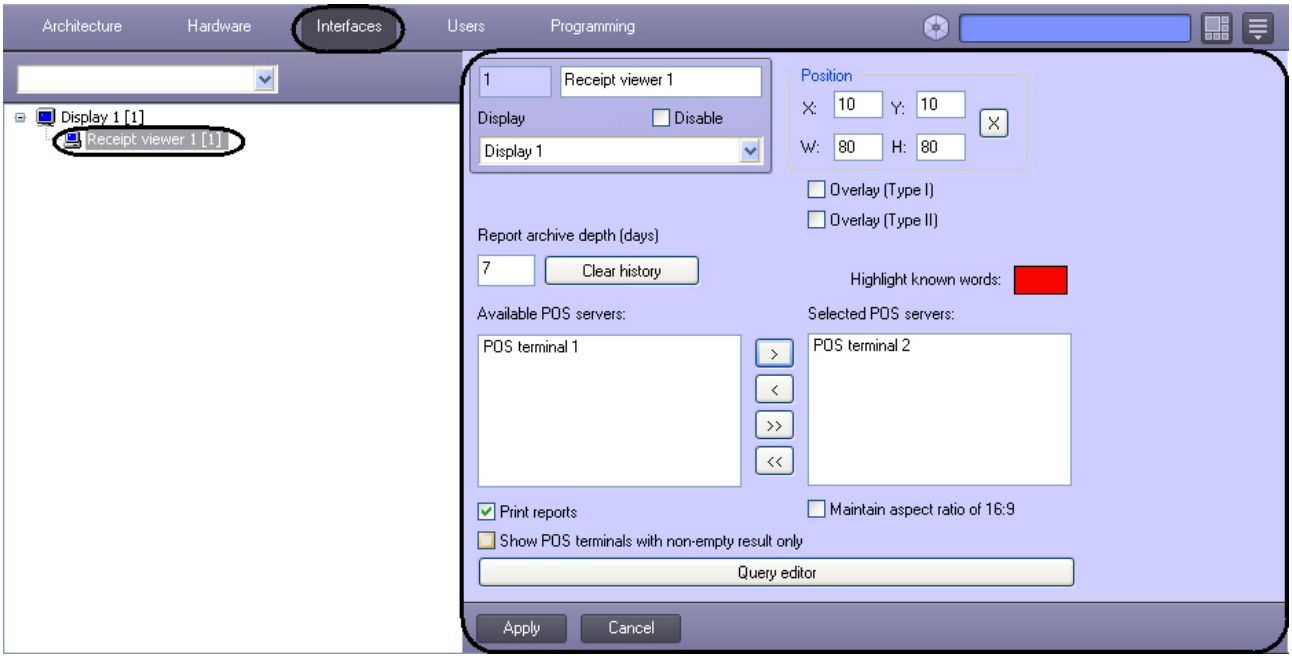


6.5 Setting up the Receipt viewer window

6.5.1 The Receipt viewer window setup procedure

The **Receipt viewer** object is a child of the **Screen** object; it is used for creating user queries on the receipts database.

To create and set up the **Receipt viewer** object, use the **Interfaces** tab in the **System Settings** window.



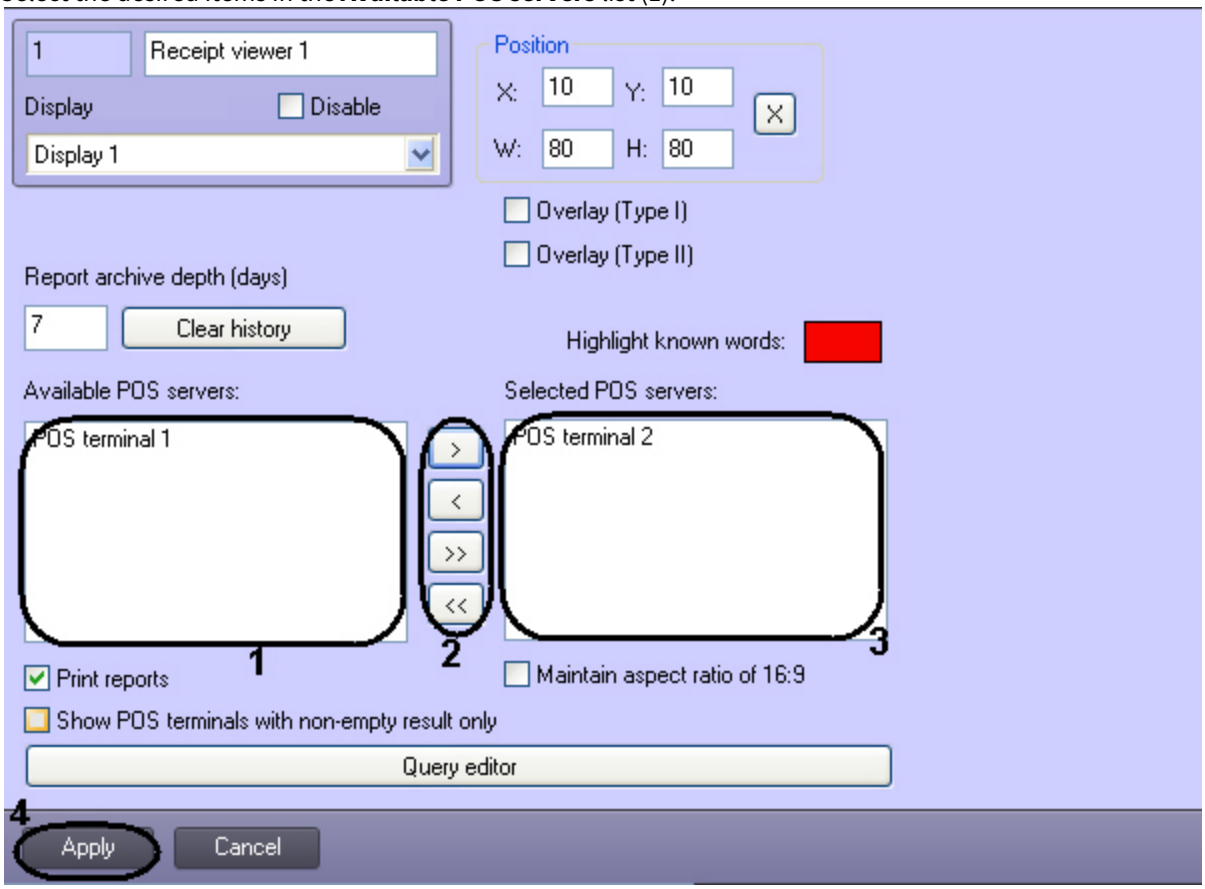
The **Receipt viewer** object setup includes the following steps:

1. Select the **POS terminals**.
2. Specify the search criteria.
3. Set up the **Receipt viewer** window.

6.5.2 Selecting POS terminals

Select the POS terminals to be used for searching the data. To select the POS terminals, do the following:

1. Select the desired items in the **Available POS servers** list (1).



2. Click the > button to move the selected POS terminals, or the >> button (2) to move all POS terminals from the list of available POS servers to the **Selected POS servers** list (3).

> **Note.**
>
> Alternatively, the < and << buttons are used to remove the selected or all POS terminals from the Selected POS servers list to the Available POS servers list.

3. Click **Apply** (4).

Selecting POS terminals is complete.

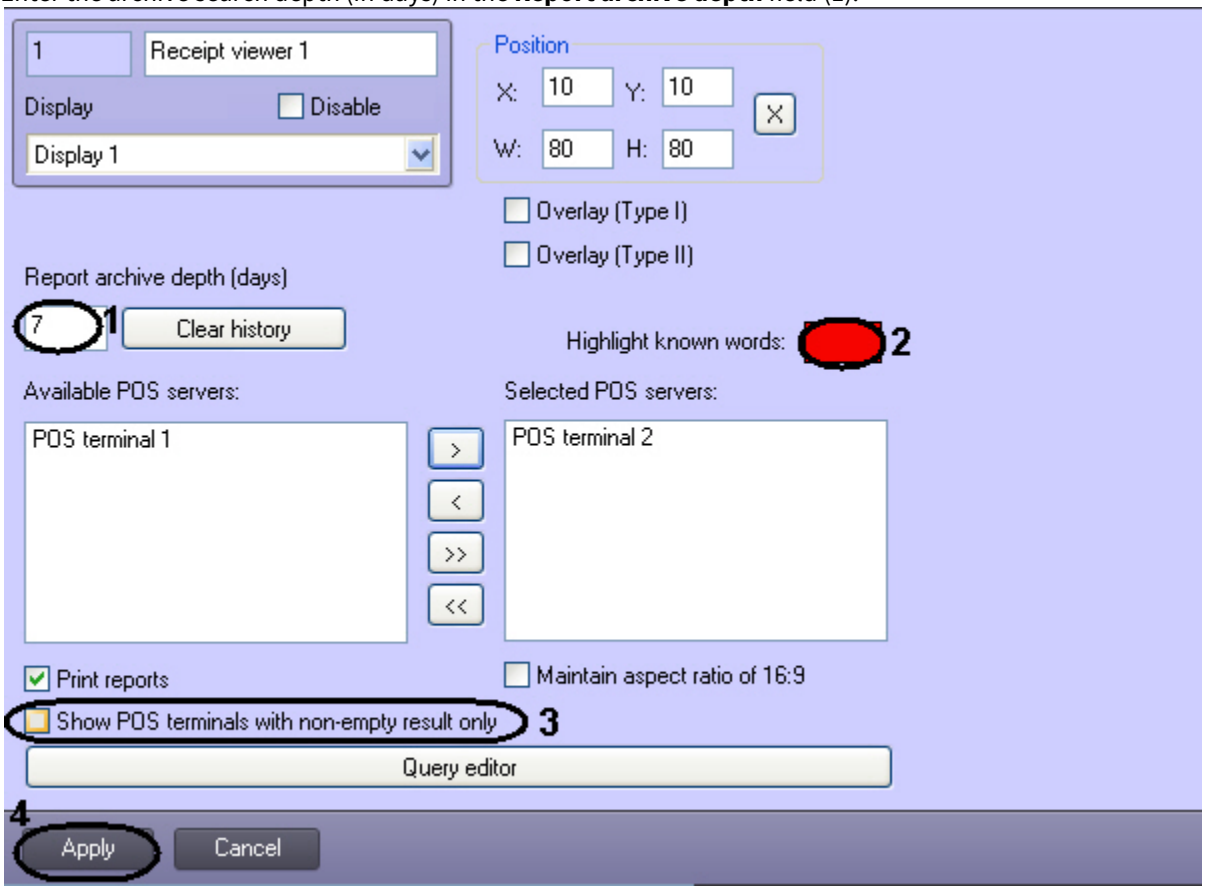
6.5.3 Specifying the search criteria

To set up the receipts database search, the following parameters should be specified:

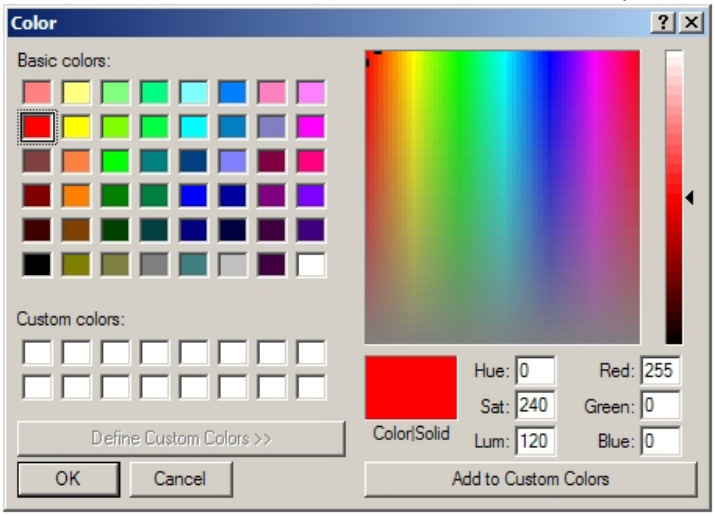
1. search depth – the receipts database search depth;
2. highlighting of found words – the option for highlighting the found words in the search results;
3. showing the POS-terminals with positive search results – displaying only the POS servers whose data contains the required words.

To specify the receipts database search criteria, do the following:

1. Enter the archive search depth (in days) in the **Report archive depth** field (1).



2. To enable highlighting of known words, double-click the **Highlight known words** color box and select the color in the standard Windows color selection box that opens (2).



3. When only the POS terminals with non-empty search results should be displayed, check the **Show POS terminals with non-empty search results only** checkbox (3).
4. Click **Apply** (4).

The receipts database search criteria are now set.

6.5.4 Setting up the Receipt viewer window display

To set up the **Receipt viewer** window, the following parameters should be specified:

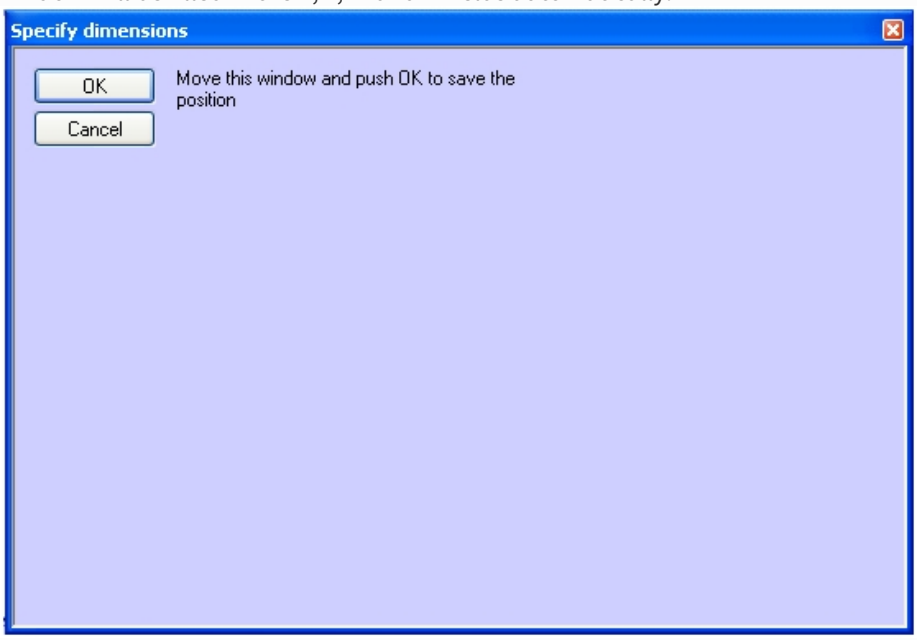
1. coordinates – the position and size of the window;
2. overlay type – the type of the overlay of the synchronous display of video image and search results;
3. print reports – the operator can print the search results.

To set up the **Receipt viewer** window, do the following:

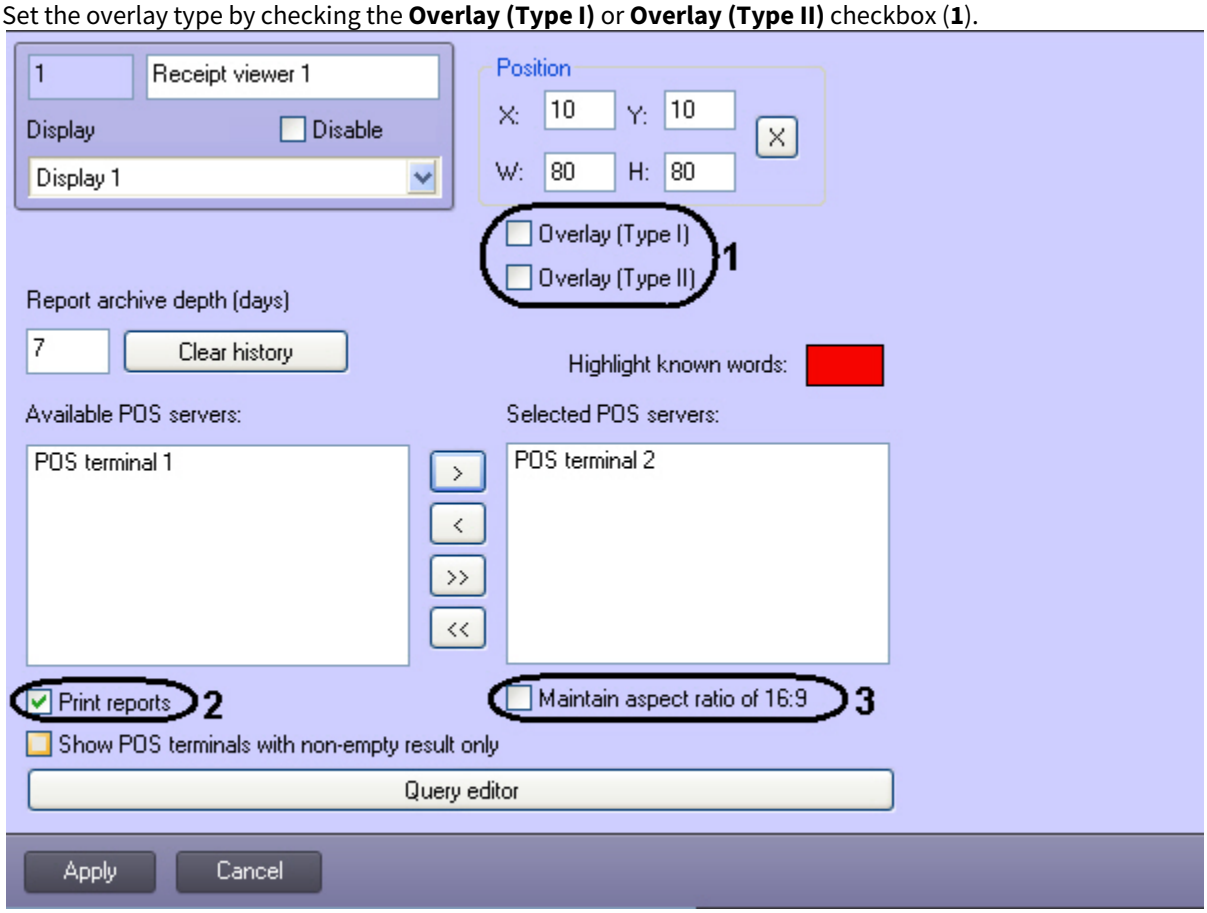
1. Specify the position and size of the **Receipt viewer** window: **X** is the indent relative to the left border of the video image, **Y** is the indent relative to the top border of the video image, **W** is the window width, **H** is the window height.

Note.

The coordinates can be set up using the visual method. Click the  button and use the mouse to set the location and size of the sample window, then click **OK**. The coordinates of the sample window will be filled in the X, Y, W and H fields automatically.



2. Set the overlay type by checking the **Overlay (Type I)** or **Overlay (Type II)** checkbox (**1**).

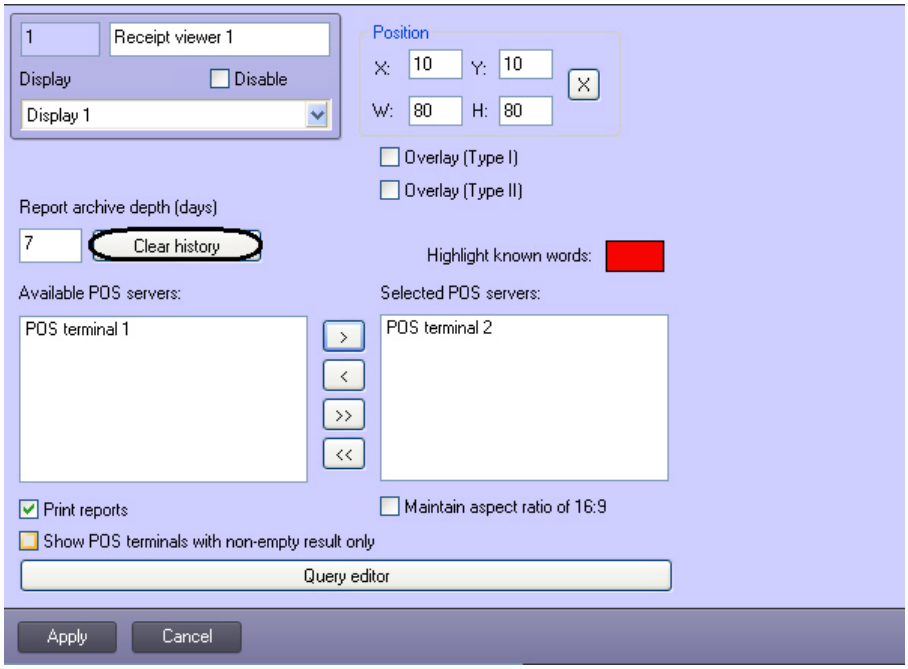


3. To allow the operator to print the search results, check the **Print reports** checkbox (**2**).
4. Set the **Maintain aspect ration of 16:9** to display the archive in 16:9 format (**3**).

The Receipt viewer window is now set.

Note.

To clear the history of user queries in the Receipt viewer window, click the **Clear history** button .



6.5.5 Editing the receipts database queries (optional)

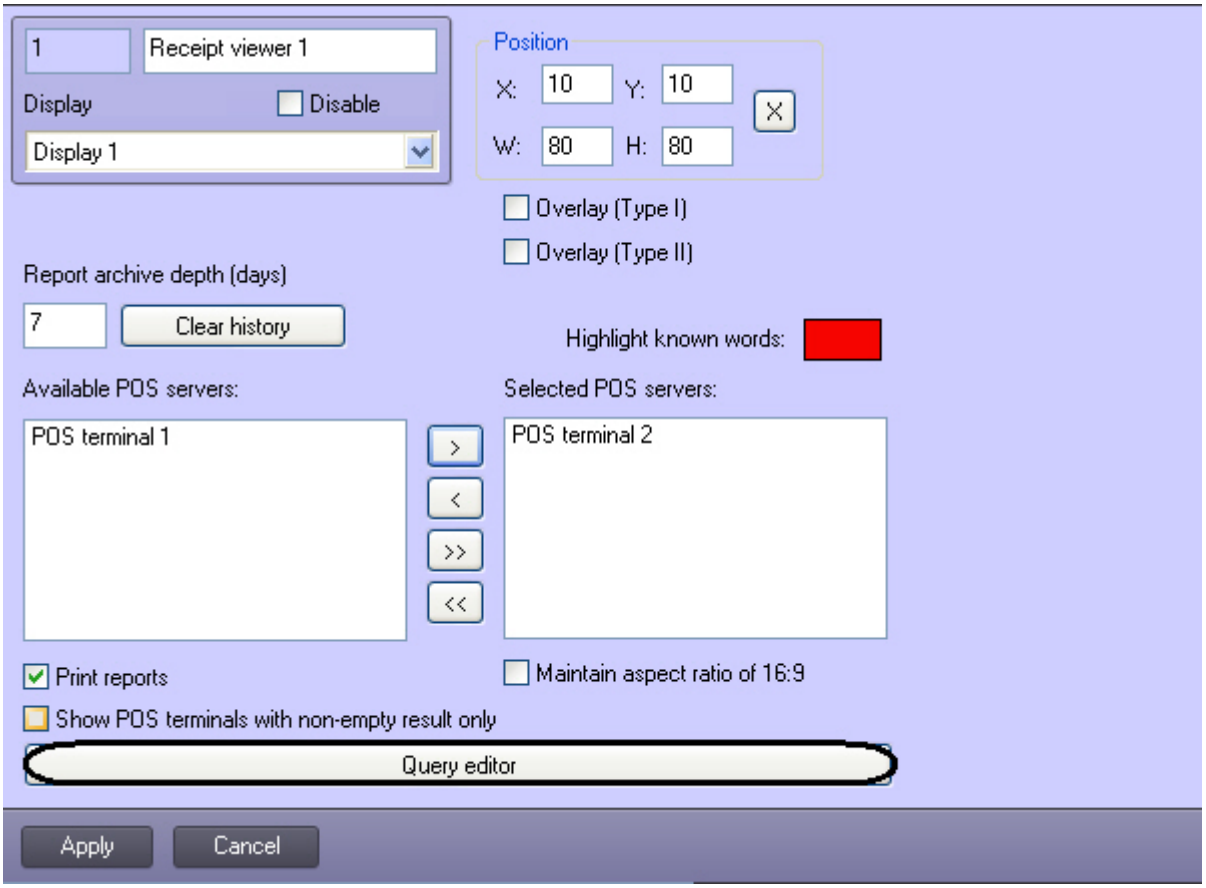
The user can create and edit queries in the receipts database. This is an optional function in addition to system setup.

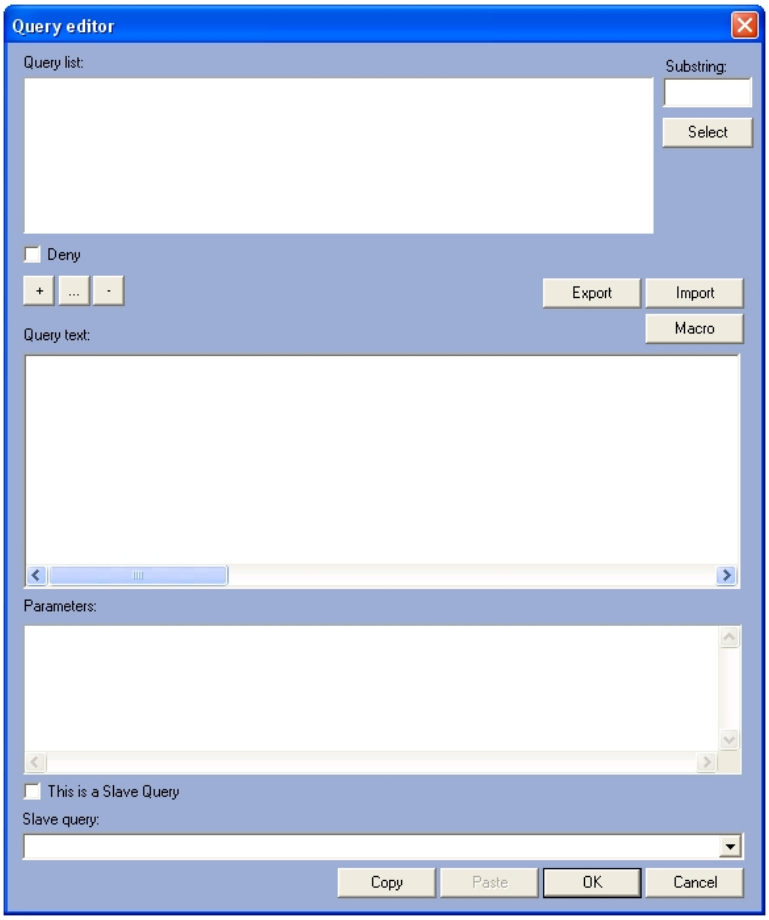
Warning! The user query in the **Receipt viewer** window will be created and processed, only if the receipts parser has been set up (see the Setting up the parser (optional) section).

Query editor provides the following functions:

1. Creating and editing the list of queries. The parameters can be imported from a text file (POS query file) or using the built-in functions.
2. Search for a query in the list
3. Export query parameters into a file or other **Receipt viewer** objects.

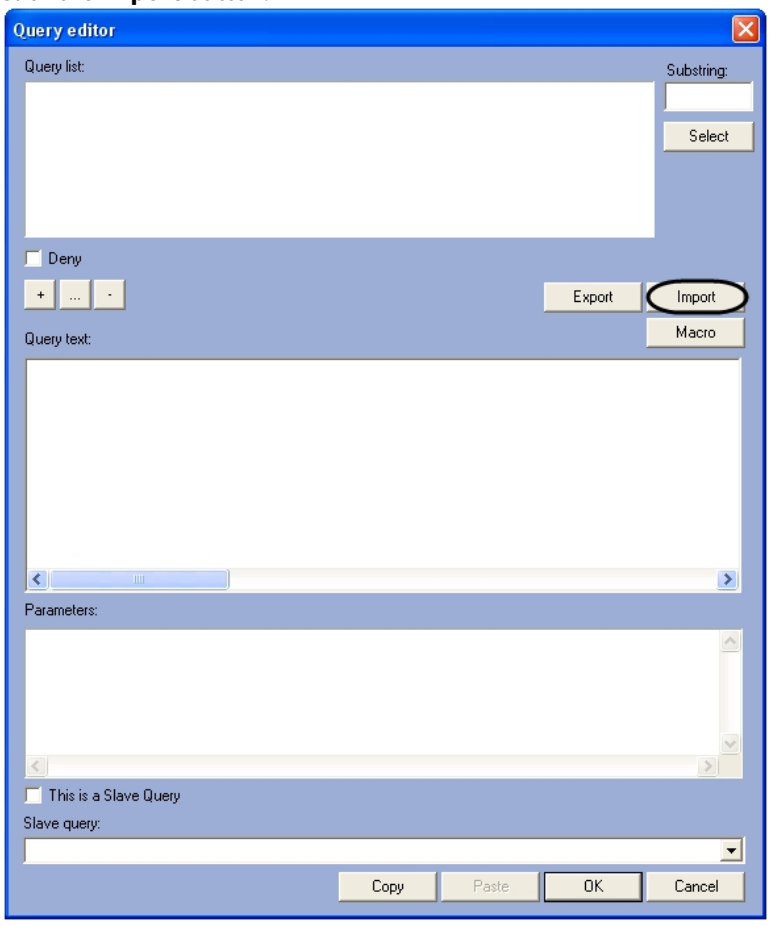
To open the query editor, click the **Query editor** button. The **Query editor** window opens.


1
Receipt viewer 1
Display
Disable
Display 1
Position
X: 10
Y: 10
W: 80
H: 80
Overlay (Type I)
Overlay (Type II)
Report archive depth (days)
7
Clear history
Highlight known words:
Available POS servers:
Selected POS servers:
POS terminal 1
POS terminal 2
>
<
>>
<<
Print reports
Maintain aspect ratio of 16:9
Show POS terminals with non-empty result only
Query editor
Apply
Cancel



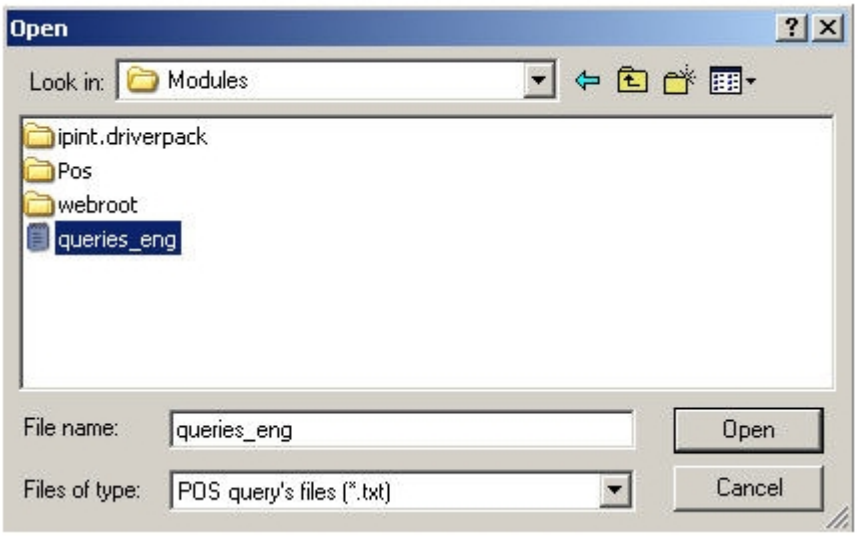
To import a query from a text file, do the following:

1. Click the **Import** button.

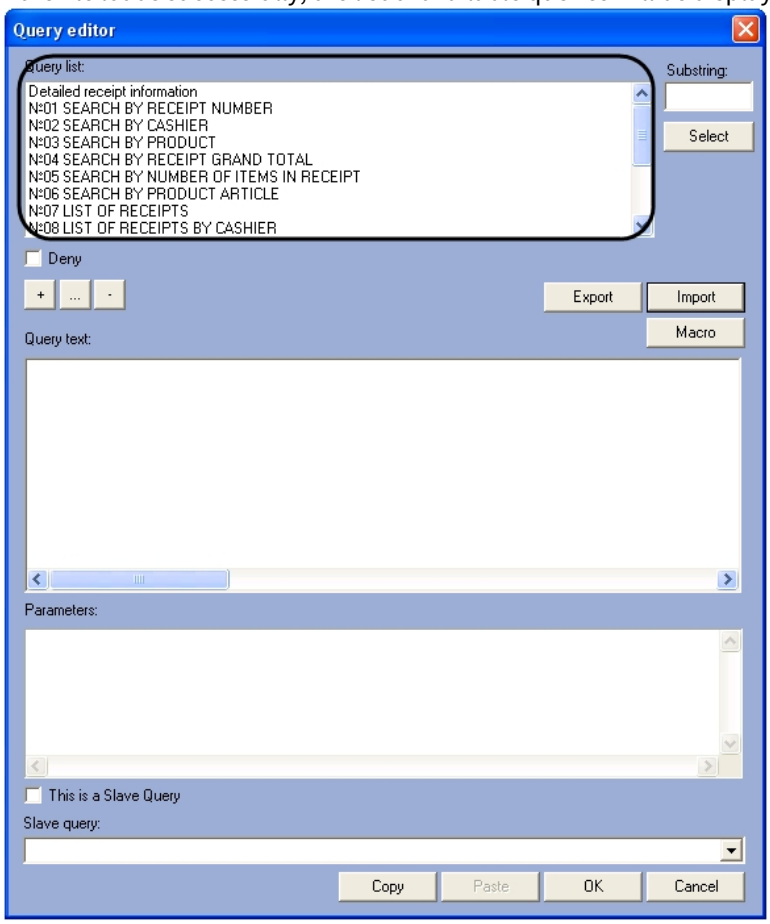


2. Open a query file in the standard Windows file open dialog box.

> **Note.**
>
> We recommend importing the list of queries from the <*Axxon PSIM* program folder>\Modules\queries_eng.txt file included in the *Axxon PSIM* installation kit.

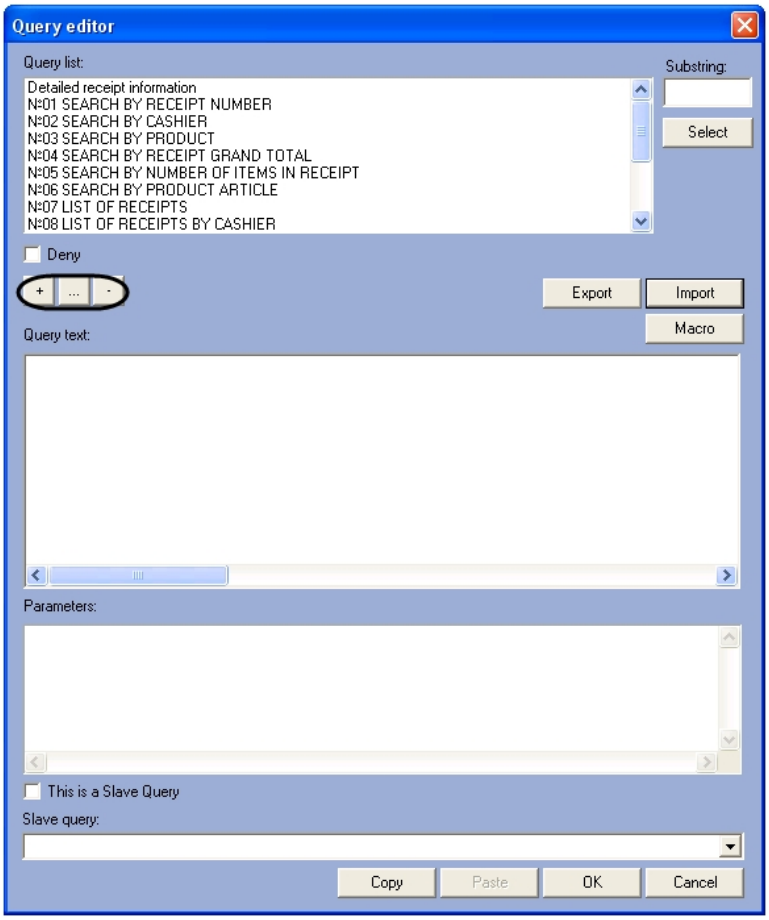


3. If the file loads successfully, the list of available queries will be displayed in the **Query list** area.



The query file import is complete.

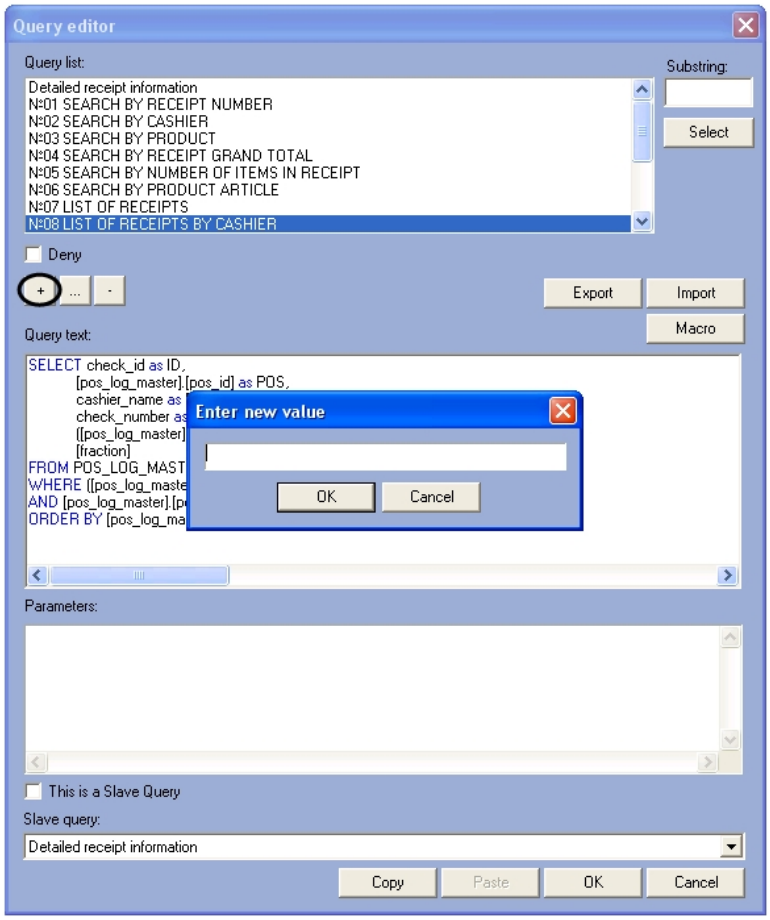
To edit queries, use the editing buttons.



To add a query to the **Query list**, do the following.

1. Click the "**+**" button.
2. Enter a name for the query in the dialog box that opens.

3. Click **OK**.



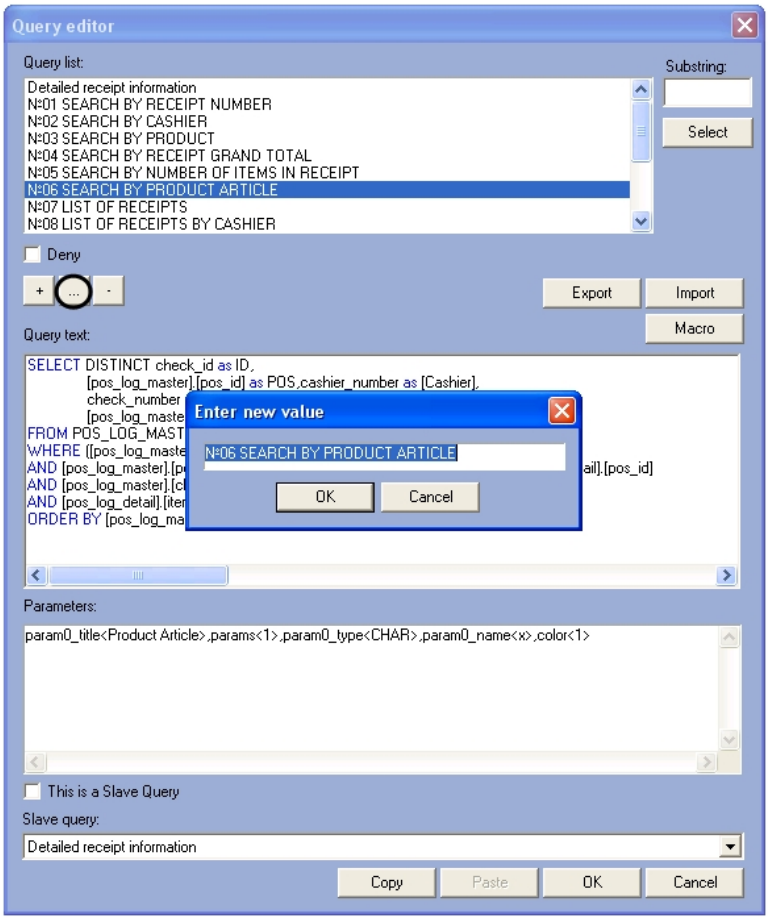
The name of the new query will be added to the list.

To edit a query name in the **Query list**, do the following

1. Select a query in the **Query list**
2. Click the **"..."** button.

> **Note.**
>
> Or double-click the query name instead of clicking the "…" button.

3. Enter a new name for the query in the dialog box that opens.
4. Click **OK**.

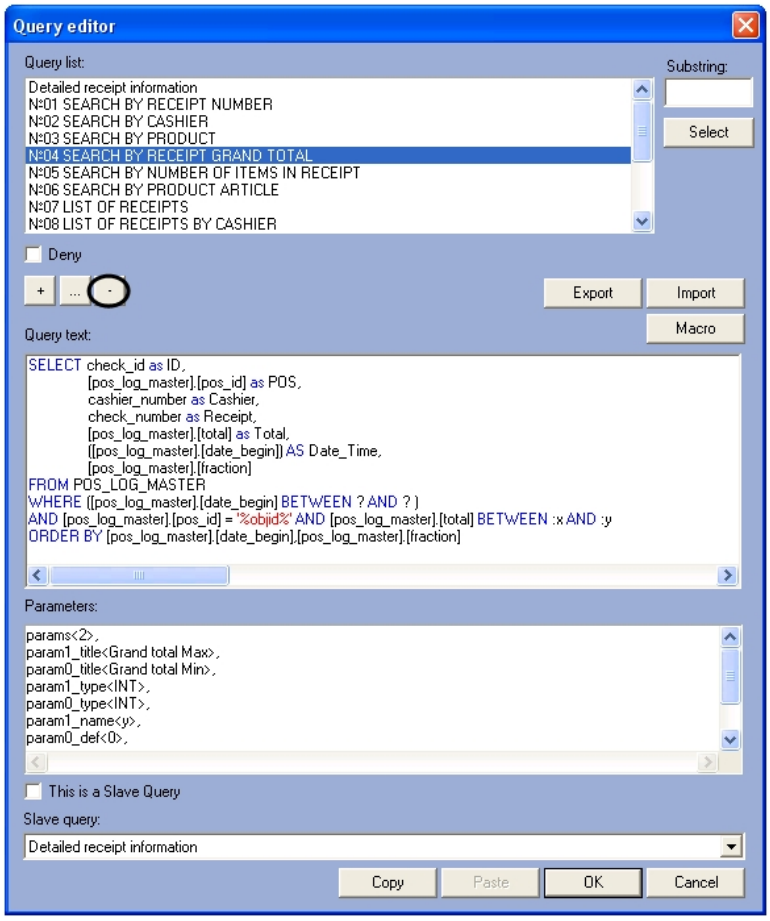


The query name will be changed.

To delete a query from the **Query list**, do the following:

1. Select a query in the **Query list**

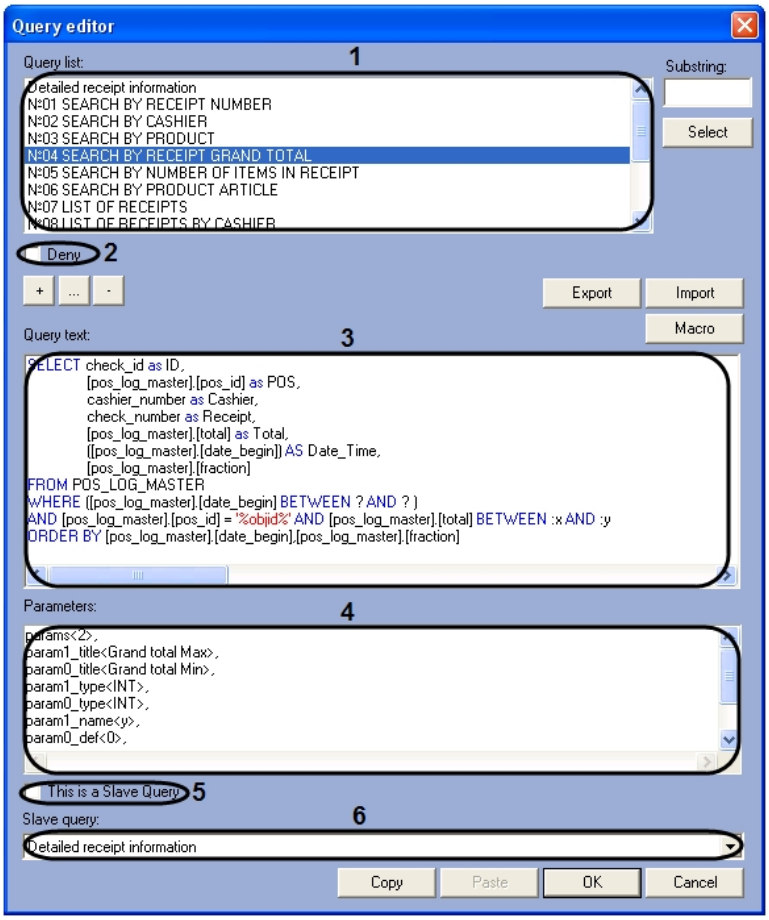
2. Click the "-" button.



The query will be deleted from the list.

> **Note.**
>
> A query can be also deleted by right-clicking the query name to open the drop-down menu and selecting the **Delete** option.

To display a query text, select its name in the **Query list**. The query contents are shown in the **Query text** area.



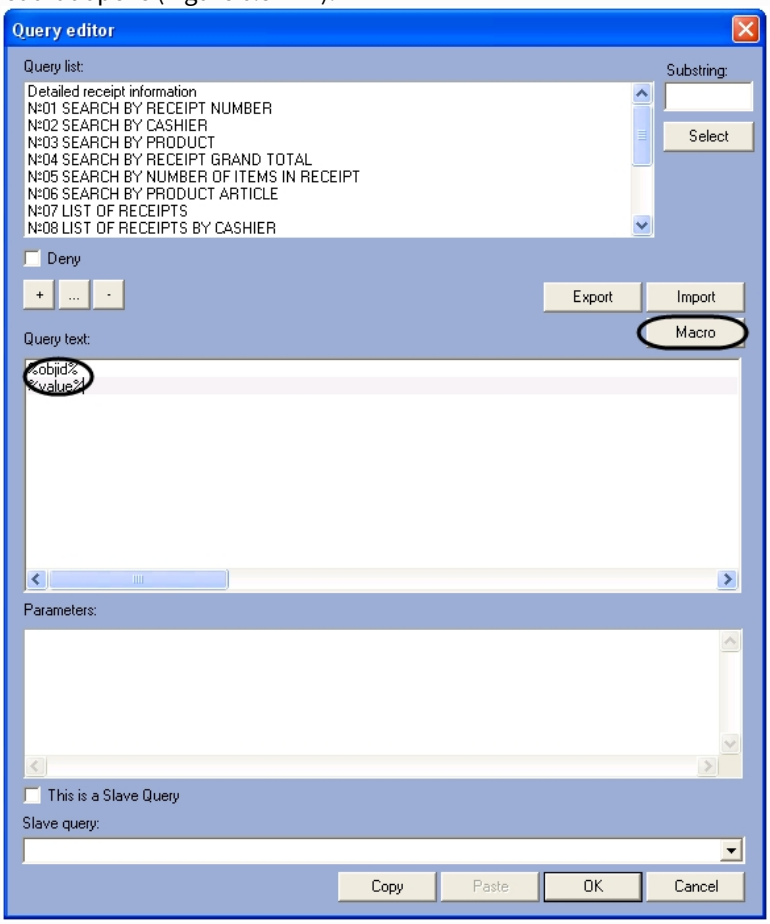
The table shows the interface elements of the **Query editor** window.

No	Element name	Element type	Description	Data type	Default value	Value range
1	Query list	List, items imported or edited using the editing buttons	List of queries	Names of existing queries	-	Depends on the number of existing queries
2	Hide	Checkbox	Hides the query in the **Receipt viewer** window	Boolean	No	Yes – the query is not displayed in the **Receipt viewer** window. No – the query is displayed
3	Query text	Text field	The text of the query	SQL language	-	-

No	Element name	Element type	Description	Data type	Default value	Value range
4	Parameters	Text field	Query parameters	SQL language	-	-
5	This is a slave query	Checkbox	Makes the query a slave	Boolean	-	Yes – the query is a slave. No – the query is not a slave
6	Slave query	Drop-down list	The query which is a slave relative to this query	Names of existing slave queries	-	Depends on the number of existing slave queries

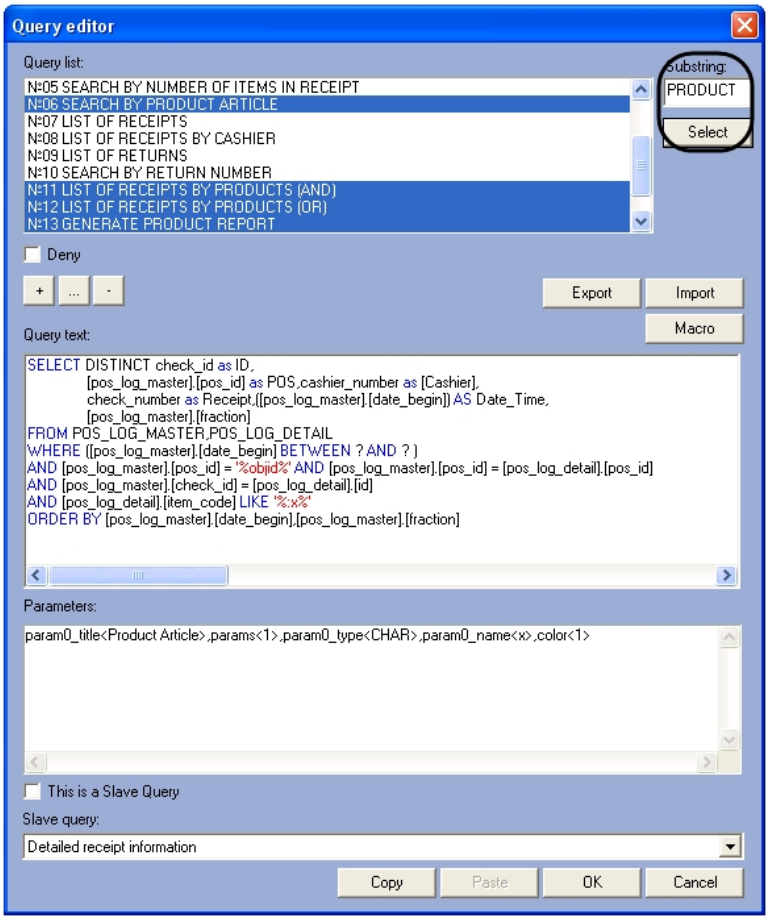
Note.

Use SQL templates while editing the text of the query. Click the **Macro** button and select an item from the list that opens (Figure 6.5—24).



To search for queries in the **Query list**, do the following

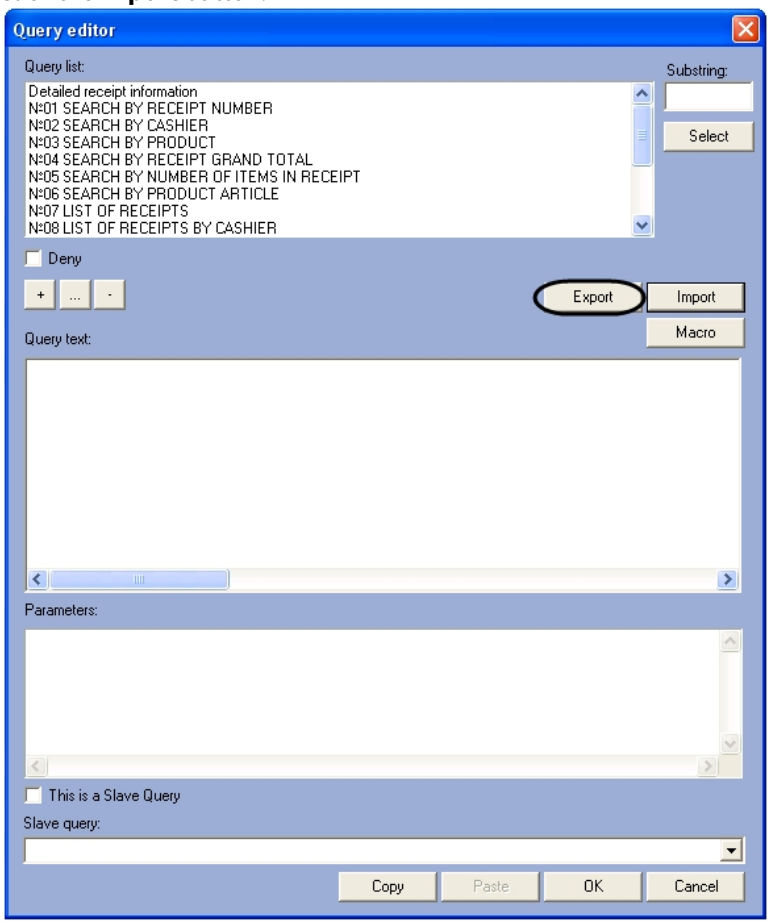
1. Enter the word to find in the **Word** field
2. Click the **Find** button.
3. The query names containing the word will be highlighted in the **Query list**.



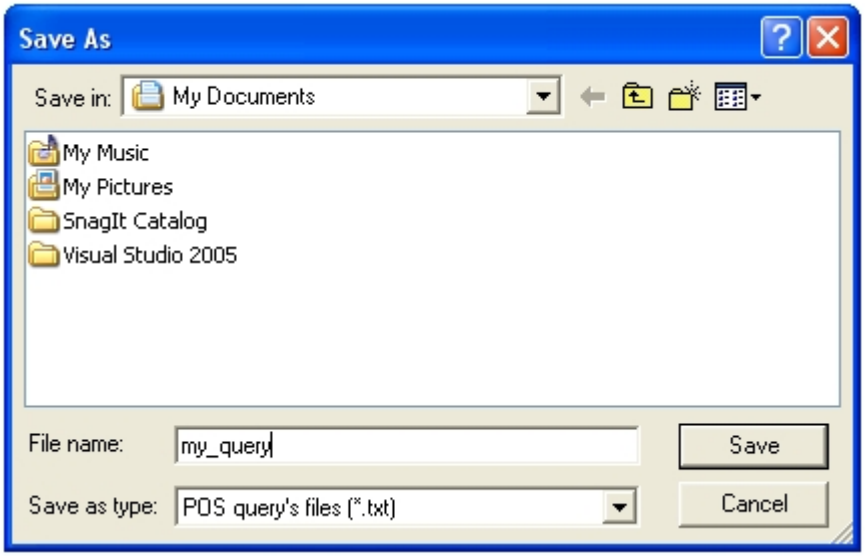
The word search in the **Query list** is complete.

To export the query list into a file, do the following:

1. Click the **Export** button.



2. Save the query file in the standard Windows file save dialog box.



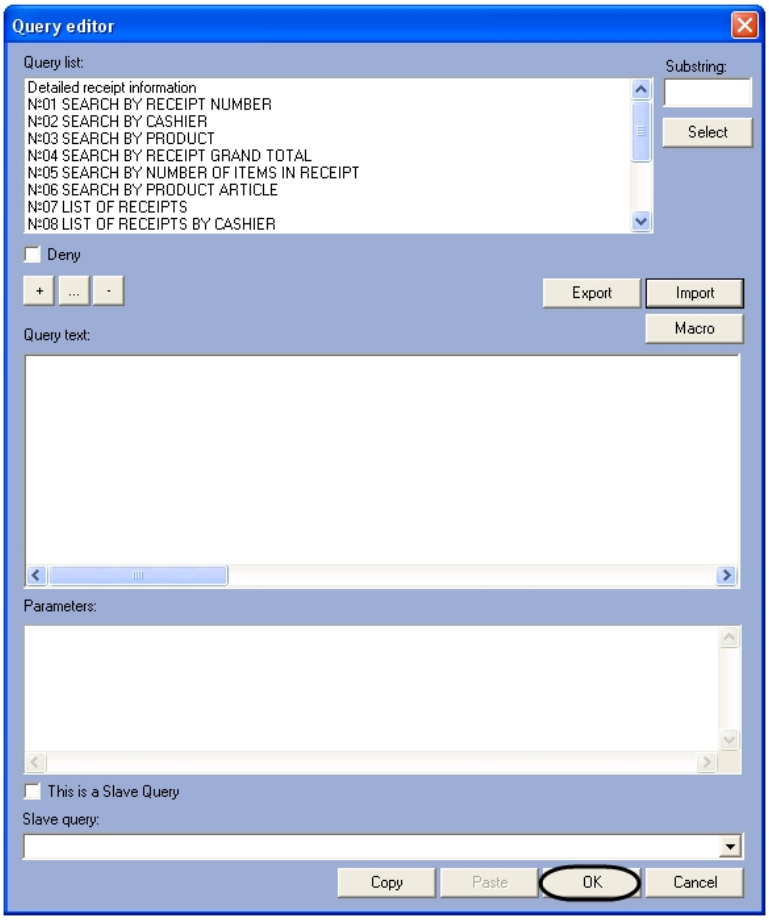
3. The user queries will be saved in the file.

Query export is complete.

Note.

Use the **Copy** and **Paste** buttons to copy the query list to other **Receipt viewer** windows.

To save changes and close the **Query editor** window, click **OK**.

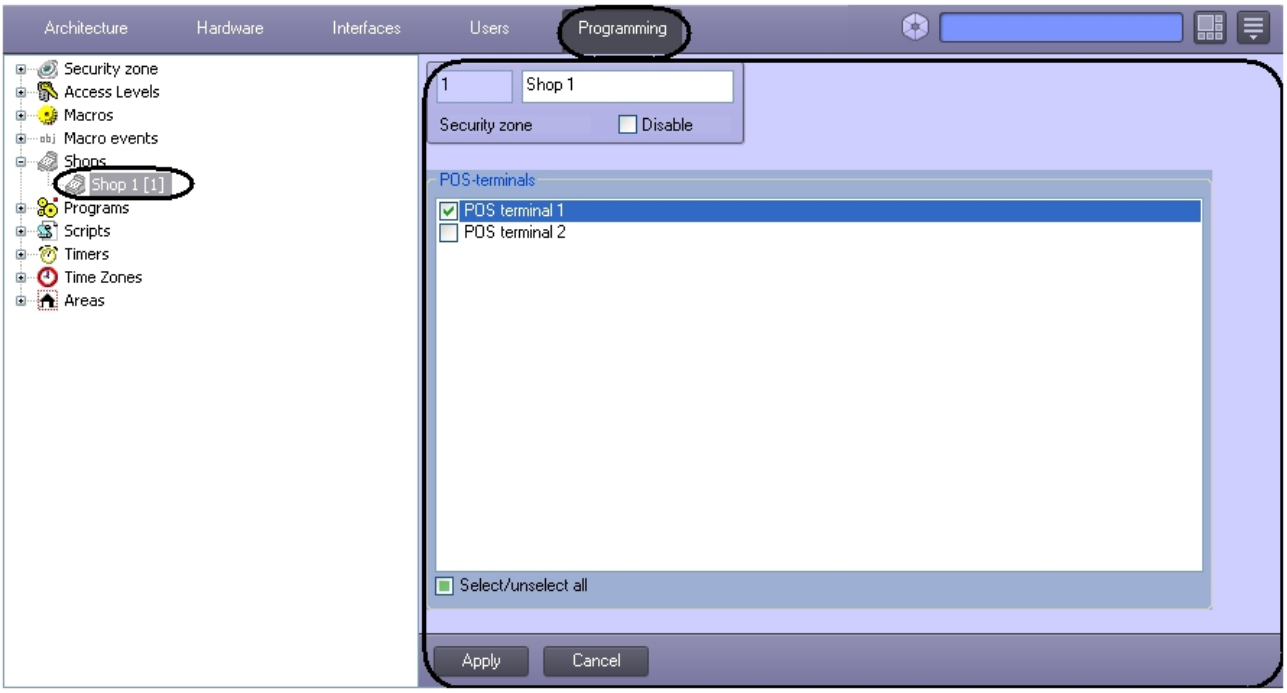


The query editing in the **Receipt viewer** window is complete.

6.6 Setting up the Shop system object

The **Shop** system object is for integration of POS terminals that are physically installed in one shop.

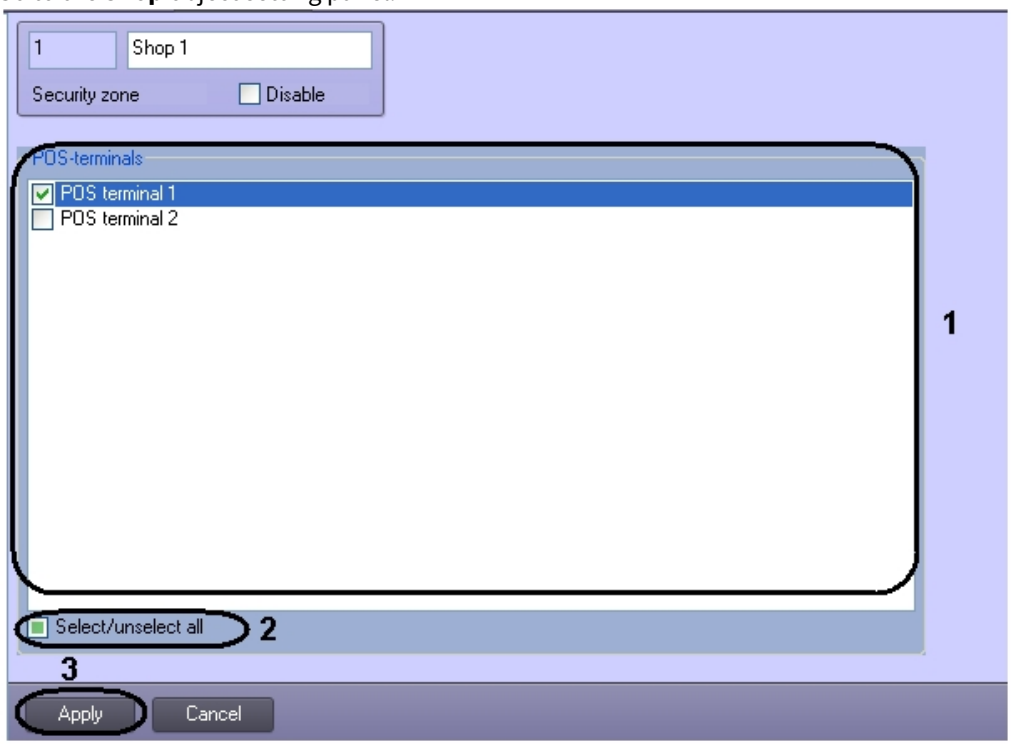
Creation and setup of the **Shop** system object is carried out on **Programming** tab of **System setting** dialog box



Setting parameters of the **Shop** system object is carried out on setting panel of the **Shop** object.

To set parameters of the **Shop** system object do the following:

1. Go to the **Shop** object setting panel.



2. In **POS terminals** field set the checkbox next to the necessary POS terminal that is installed in the shop (1).

3. Set the **Select/unselect all** checkbox to select all POS terminals in the list (2).

> **Note.**
>
> If it's necessary to remove the selection of all POS terminals remove **Select/unselect all** checkbox by clicking it once again.

4. Click **Apply** to save the changes (3).

Setting parameters of the **Shop** object is completed.

6.7 Configuring the POS Replicator system object

6.7.1 General information about replicating the POS databases

Replicating of POS databases allows using of data from a local Server and from remote Servers while the building of reports (see the *Axxon PSIM WEB Report System.* User Guide document).

The **POS Replicator** system object is used for replicating the databases of remote Servers to the main Server. The main Server is a server on which the **POS Replicator** object is configuring. Only POS databases can be replicated using this module.

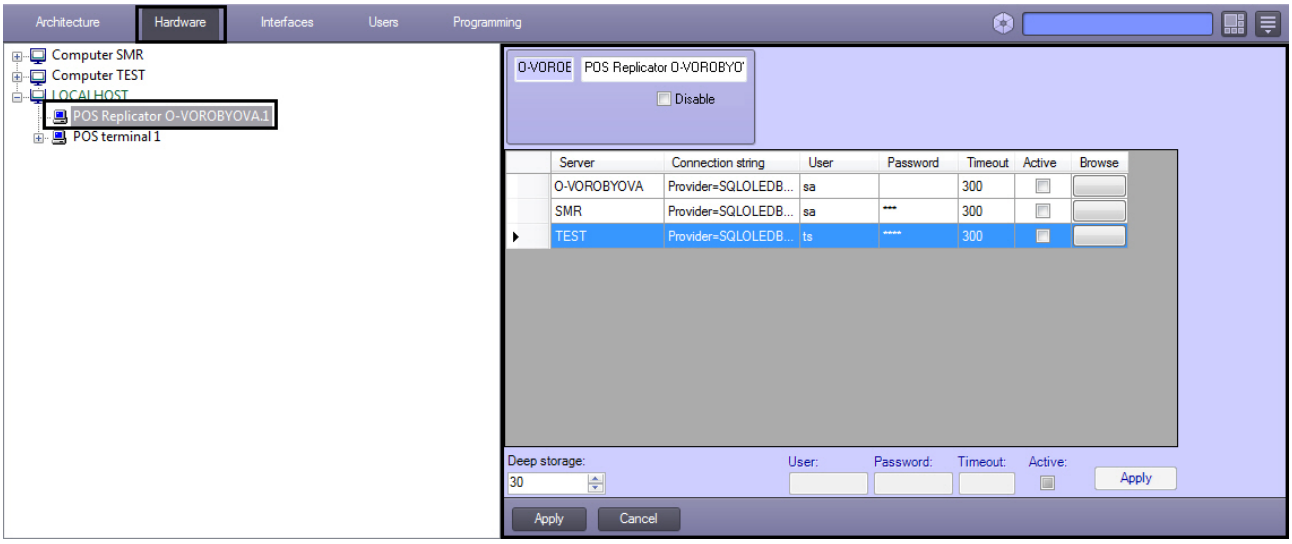
Attention! Replication is performed only for receipts in XML format, i.e. the XML protocol type is to be selected for the corresponding **POS terminal** object.

Other *POS PSIM* modules which use POS databases (e.g. *Receipts*) work with POS databases located on those Servers where the **POS terminal** objects are created, on operation with which they are configured. So the data duplication is eliminated.

> **Attention!**
>
> If the *POS PSIM* module is being updated on the Server where the *POS PSIM* module has already been installed, then it is necessary to delete the POS database before update or create a new database while updating. New databases are to be created both on remote Servers and on the main Server.

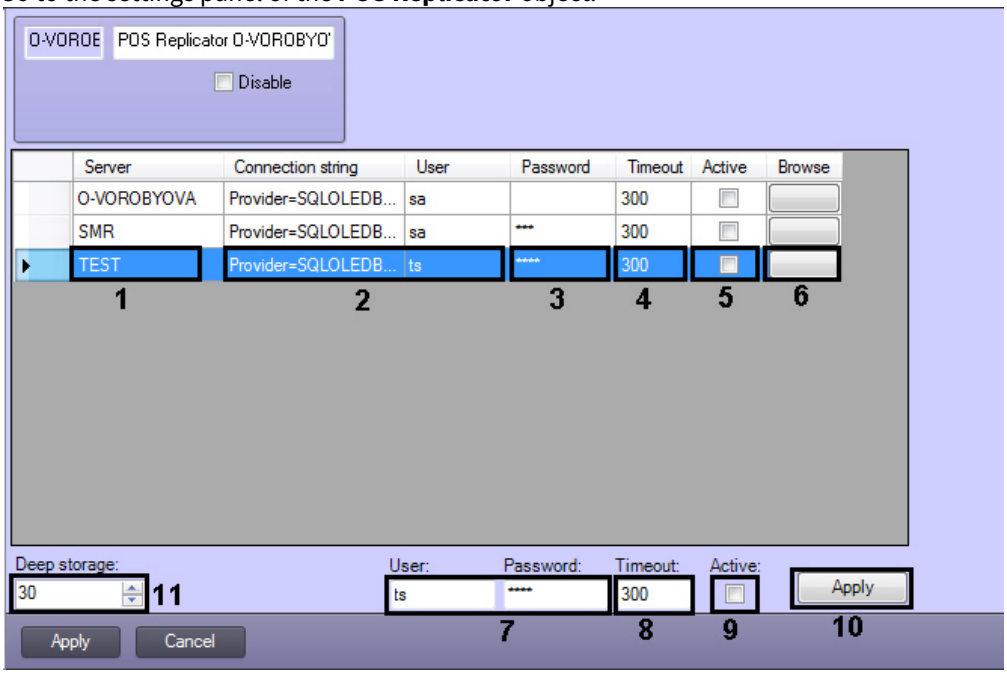
6.7.2 Configuring the replication of POS databases

The **POS Replicator** system object is created under the **Computer** object in the **Hardware** tab of the **System settings** dialog box. Only one **POS Replicator** object can be created on the Server.



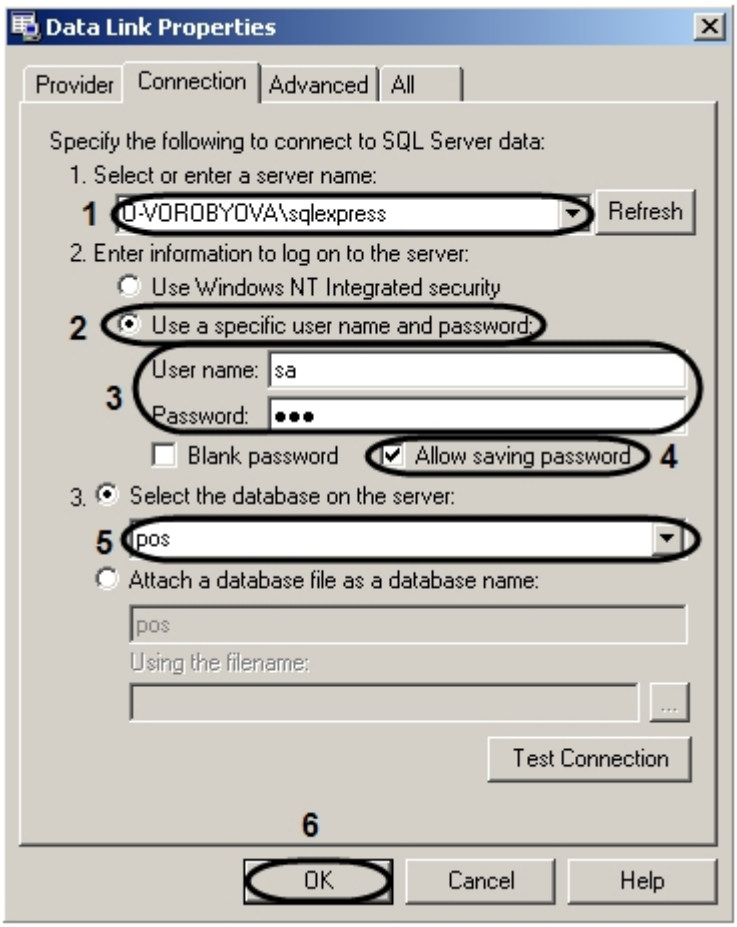
To configure the **POS Replicator** system object do the following:

1. Go to the settings panel of the **POS Replicator** object.



2. Names of servers in *POS PSIM*™ on which the Servers of databases are run are specified in the **Server** column (**1**). The list is forming automatically and it can't be edited manually. The server is placed to the list only if one or more **POS terminal** objects are created.
3. Automatically created string of connection to remote database server is specified in the **Connection string** column (**2**). Name of SQL-server is made from the Server name adding the \sqlexpress, on default the name of database is POS. If it is necessary to change the connection strings do the following:
    a. Click the key in the **Browse** column (**6**). The **Data Link Properties** window is opened in order to configure the database connection.

b. In the **Select or enter a server name** field select from the list or enter manually the name of MS SQL Server where the connected database is stored (**1**).



c. Set the switch into the **Use a specific user name and password** position (**2**).
d. In the **User name:** field enter the user name (login) to connect to the MS SQL server, in the **Password** field enter the password to access the database (**3**).
e. Set the **Allow saving password** checkbox (**4**).
f. Select the name of connected POS database from the **Select the database on the server** list (**5**).
g. Click **OK** (**6**).

4. Specify the replication parameters using one of the following way:
   a. For each server:
      i. User name and password specified the previous step of connection to the database will be automatically entered in the **User name** and **Password** fields (**3**).
      ii. In the **Timeout** field enter the data replication period in seconds (**4**).
      iii. Set the **Active** checkbox in case of replication is to be performed from the specified server to the maim server (**5**).
      iv. Repeat 4.a.i – 4.a.iii steps for each server in the list.
   b. For all servers, if it is necessary to use equal parameters for them:
      i. Select servers from the list for which replication parameters are to be changed.
      ii. Enter the user name and password which are used to connect to all databases in the list (**7**).
      iii. In the **Timeout** field enter the data replication period in seconds (**8**).
      iv. Set the **Active** checkbox if it is necessary to use all connections (**9**).
      v. Click **Apply** button (**10**).

> **Note.**
>
> It is possible to specify following parameters for several Servers such way: user name and password of connection to the POS database, timeout and state of replication.

5. In the **Deep storage:** field enter number of days during which data will be saved in the database (**11**).
6. Click **Apply** button.

Replication starts automatically when all these actions are completed. Databases with replication time rating are added to the replication queue. Databases with the lowest replication period have the highest priority. Several replication processes can be performed simultaneously depending on the number of cores in the main Server processor.

The replication process can be detected through the terminal window of *Pos Aggregator* module which is activated by double clicks on module sign in the tray.

Configuration of the **POS Replicator** system object is completed.

6.8 Configuring the POS Process system object

6.8.1 General information about POS process system object

The **POS process** system object enables configuring the generation of informational messages from *POS process* module in case of the number of events from POS terminal with equal values of specified parameter exceeds some specified number. For example, if the informational message is to be generated in case of the card number is repeated more than specified number of times.

> **Attention!**
>
> To generate the event, configure the parser for sending events (set the **Send event** checkbox) even if the xml-parser is in use (see the Editing the .prl parser section).

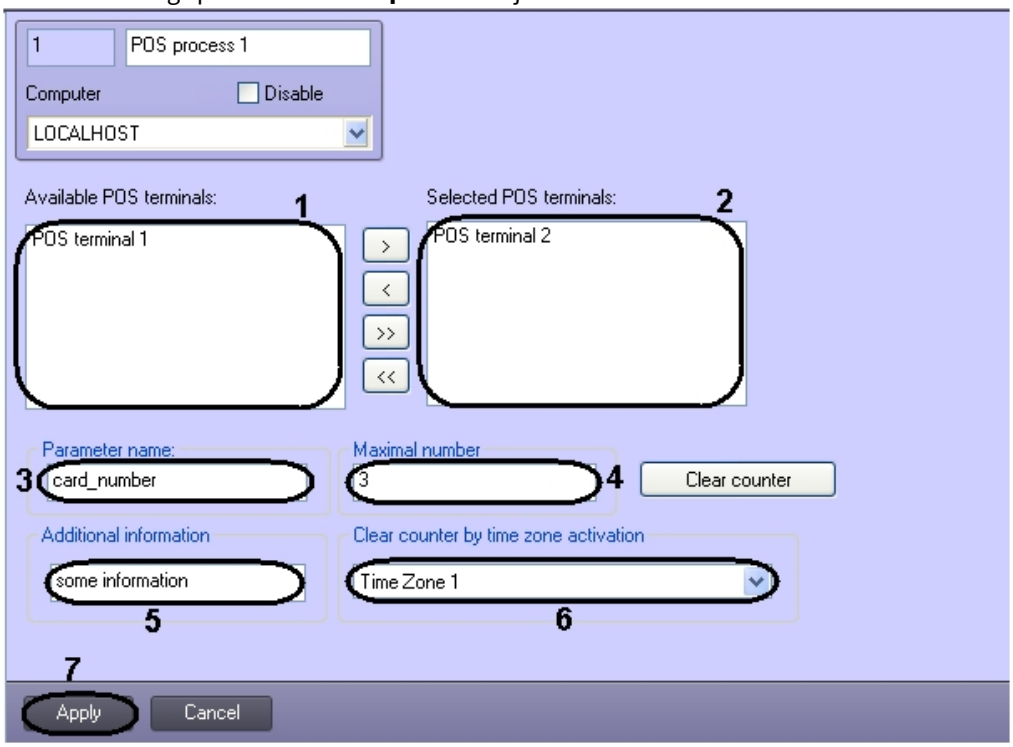
6.8.2 Configuring the POS process object

The **POS process** system object is created under the **Computer** object in the **Hardware** tab of the **System setting** dialog box.



To configure the **POS process** system object do the following:

1. Go to the settings panel of the **POS process** object.



2. **POS terminal** objects created in the object tree are listed in the **Available POS terminals** list (1).

3. Move required terminals to the **Selected POS terminals** using > and >> buttons (2). Information from selected terminals will be in use to count cases of appearing the specified parameter.

> **Note.**
>
> To back **POS terminals** from the **Selected POS terminals** list to the **Available POS terminals** list use < and << buttons.

4. In the **Parameter name** field enter the name of parameter at which the number of equal values is to be controlled (3). Parameter name is depends on protocol characteristics on which the terminal works.
5. In the **Maximal number** field enter the maximal number of appearance of equal parameter values (4).
6. In the **Additional information** enter the events description which will be included to the event description next to the card number and number of repeats (5).

> **Note.**
>
> In example displayed in the figure, the description of alarm messages will be presented as «Some information 3x123», where 123 is a card number, 3 is a number of times when the parameter appeared.

7. From the **Clear counter by time zone activation** drop-down list select the **Time zone** object corresponding to the time period start of which shows the necessity to reset the counter of parameter appearances (6).

> **Note.**
>
> The **Time zone** objects are created and configured on the **Programming** tab of **System setting** dialog box. Detail information about creating and configuring the time zone is presented in the *Axxon PSIM* software package. Administrator's Guide document.

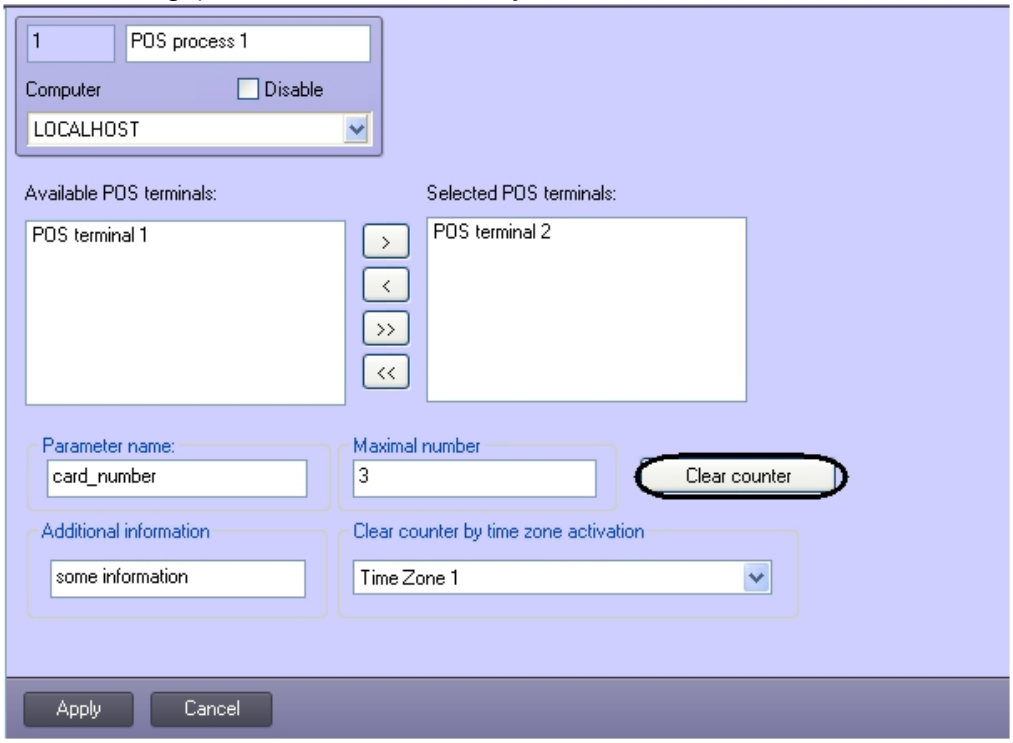
8. Click the **Apply** button (7).

Configuration of the **POS process** system object is completed.

6.8.3 Clearing the counter

To clear the counter of parameter appearances, do the following:

1. Go to the settings panel of the **POS process** object.



2. Click the **Clear counter** button.

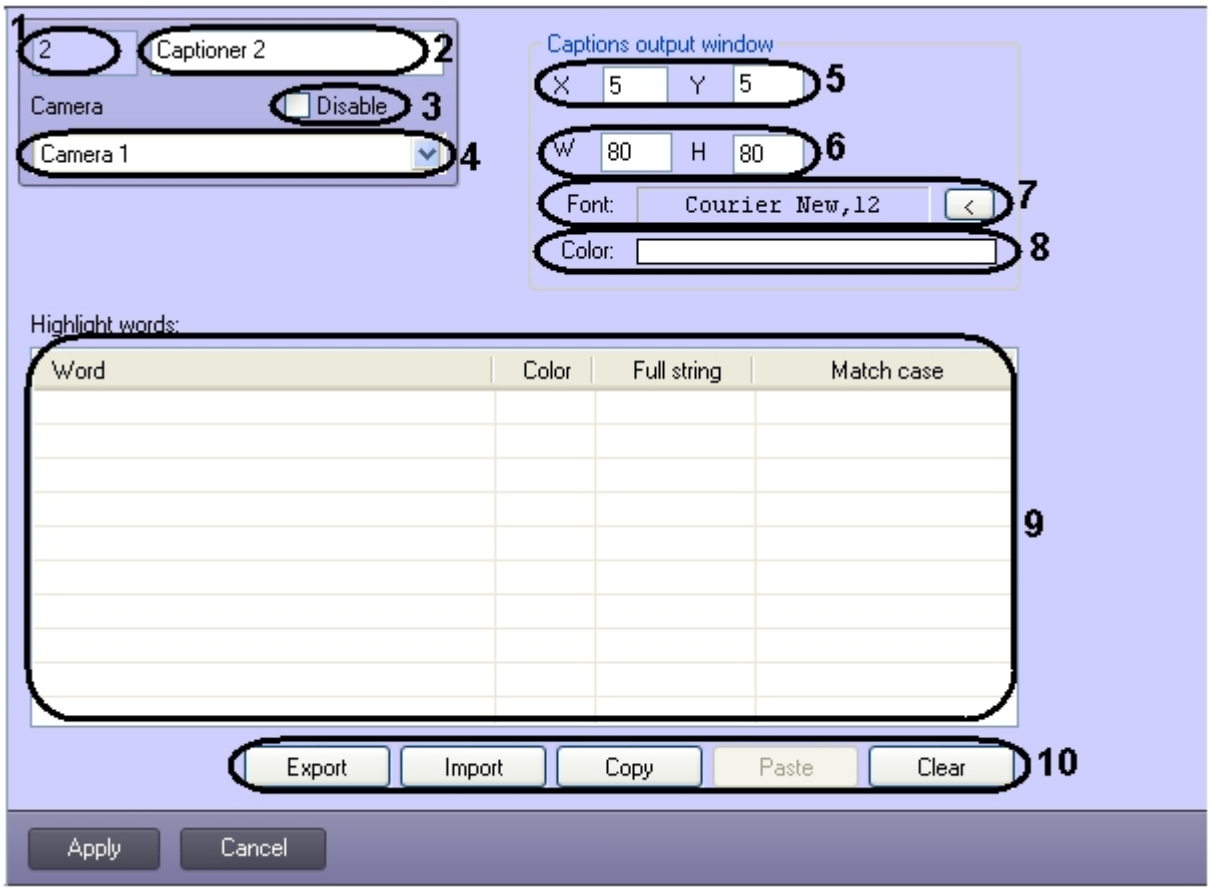
Clearing the counter is completed.

7 Appendices

7.1 Appendix 1. Description of interface windows

7.1.1 The Captioner object settings panel

The figure shows the **Captioner** object settings panel.



The table describes the elements in the **Captioner** settings panel

No	Element name	Element type	Description	Data type	Default value	Value range
1	Number	Auto	Identification number of the object in the system	Whole positive numbers	-	Depends on the number of objects

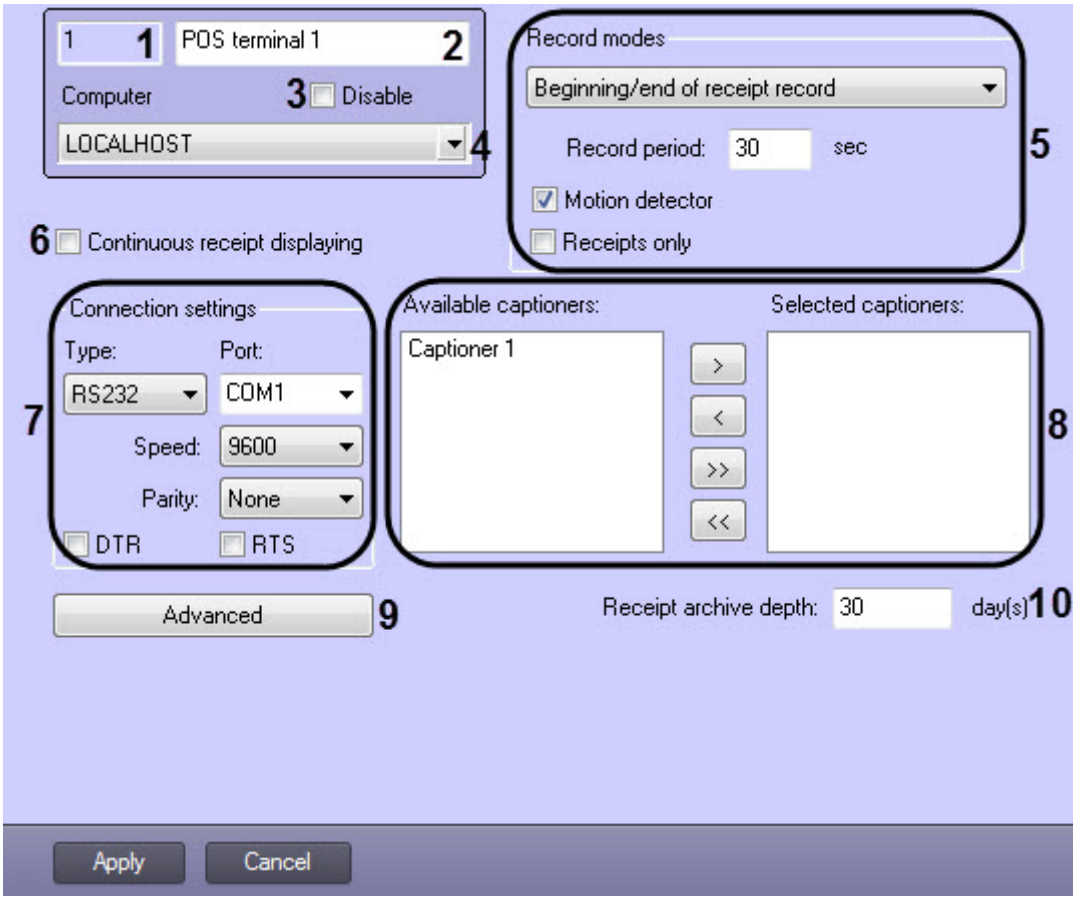
No	Element name	Element type	Description	Data type	Default value	Value range
2	Name	Text field	Object name	Latin, Cyrillic and special symbols	Titles database	Case-insensitive string of any symbols. No more than 60 symbols
3	Disable	Checkbox	Object status	Boolean	No	Yes – the object is disabled (not used). No – the object is enabled
4	Camera	Drop-down list	Parent **Camera** object	Names of existing **Camera** objects	Parent camera name	Depends on the number of existing **Camera** objects
The **Titles area** group						
5	X	Text field	X-coordinate of the upper left corner (left indent)	% of video image width	5	0 to 100
	Y	Text field	Y-coordinate of the upper left corner (top indent)	% of video image height	5	0 to 100
6	W	Text field	Titles display area width	% of video image width	80	0 to 100
	H	Text field	Titles display area height	% of video image height	80	0 to 100
The **Font** group						
7	Font	Auto	Titles font sample	Text line	Courier,12	Depends on the installed fonts

No	Element name	Element type	Description	Data type	Default value	Value range
	<	Button	Selecting the titles font (standard Windows font selection box opens)	-	–	-
The **Color** group						
8	Color	Auto	The titles text color	Color palette	White	Depends on the system color palette
	Color	Double-click	Selecting the titles text color (standard Windows color selection dialog box)	-	-	-
The **Word highlighting** table						
9	Word	Text field	The word to highlight	Text line	–	String of any symbols
	Color	Double-click	Highlighting color	Color palette	Turquoise	Depends on the system color palette
	Whole line	Checkbox	Highlights the whole line	Boolean	No	Yes – the whole line is highlighted. No – the word only is highlighted
	Match case	Checkbox	Match case	Boolean	No	Yes – case-sensitive search. No – case-insensitive search

No	Element name	Element type	Description	Data type	Default value	Value range
10	Export	Button	Exporting the table into a file	–	–	–
	Import	Button	Importing the table from a file	–	–	–
	Copy	Button	Copy the table contents to the clipboard	–	–	–
	Paste	Button	Paste the clipboard into the table	–	–	–
	Clear	Button	Clear the table	–	–	–

7.1.2 The POS terminal object settings panel

The figure shows the **POS terminal** object settings panel.



The table describes the elements in the **POS terminal** settings panel.

No	Element name	Element type	Description	Data type	Default value	Value range
1	Number	Auto	Identification number of the object in the system	Whole positive numbers	-	Depends on the number of existing **POS terminal** objects

No	Element name	Element type	Description	Data type	Default value	Value range
2	Name	Text field	Object name	Latin, Cyrillic and special symbols	POS terminal	Case-insensitive string of any symbols. No more than 60 symbols
3	Disable	Checkbox	Object status	Boolean	No	Yes – the object is disabled (not used). No – the object is enabled
4	Computer	Drop-down list	Parent **Computer** object	Names of existing **Computer** objects	Parent computer name	Depends on the number of existing **Computer** objects
The **Recording modes** group						

No	Element name	Element type	Description	Data type	Default value	Value range
5	Recording modes	Drop-down list	The recording mode	Existing recording modes	Record on receipt beginning/end	Record on receipt beginning/end. Continuous recording. Save one frame per receipt
	Record period	Text field	The recording time interval	Seconds	30	
	Motion detector	Checkbox	Record on motion detector activation	Boolean	Yes	Yes – use motion detector. No – do not use motion detector

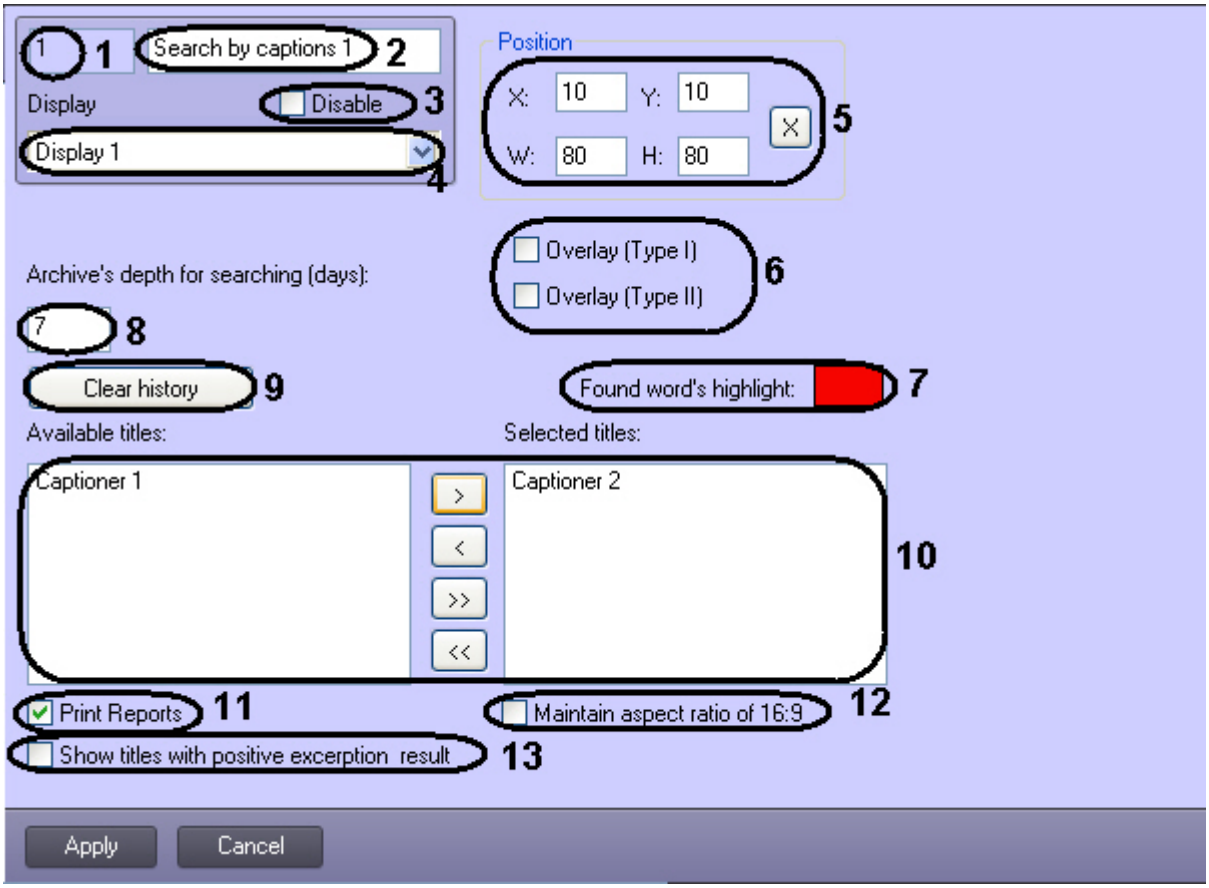
No	Element name	Element type	Description	Data type	Default value	Value range
	Receipts only	Checkbox	Receipt display option	Boolean	No	Yes – only data of the receipts between the beginning and end of the receipts are displayed on the screen and included in the Captioner. No – all the data of the processed receipts are displayed on the screen and included in the Captioner
6	Continuous receipt displaying	Checkbox	Continuous receipt displaying option	Boolean	No	Yes – there is a space between the receipts so that they do not overlap on the screen. No – the previous receipt becomes hidden when a new receipt is displayed
The **Connection settings** group						
7	Type	Drop-down list	Connection type	Supported protocols	RS232	Depends on the number of supported protocols
	Port	Drop-down list	Port number	Available ports	COM1	Number of available ports

No	Element name	Element type	Description	Data type	Default value	Value range
	Speed	Drop-down list	Connection rate in accordance with RS232 protocol	Supported rates	9600	Depends on the number of supported rates in accordance with RS232 protocol
	Parity	Drop-down list	Parity mode for RS232 protocol	Supported parity modes	None	Depends on the number of supported parity modes in the RS232 protocol
	DTR	Checkbox	DTR option for RS232 protocol	Boolean	No	Yes – use DTR control signal in the RS232 protocol. No – do not use DTR control signal in the RS232 protocol
	RTS	Checkbox	RTS option for RS232 protocol	Boolean	No	Yes – use RTS control signal in the RS232 protocol. No – do not use RTS control signal in the RS232 protocol
The **Captioner** group						
8	Available captioners	Auto	The list of available captioners	–	–	–
	Selected captioners	Auto	The list of selected captioners	–	–	–

No	Element name	Element type	Description	Data type	Default value	Value range
	<, >, >>, <<	Button	Selecting the captioners	–	–	–
9	Advanced	Button	Opening additional **POS terminal** object settings	–	–	–
10	Receipt archive depth	Text field	The size of the receipts archive	Days	30	

7.1.3 The Search by captions object settings panel

The figure shows the **Search by captions** object settings panel.



The table describes the elements in the **Search by captions** settings panel

No	Element name	Element type	Description	Data type	Default value	Value range
1	Number	Auto	Identification number of the object in the system	Whole positive numbers	-	Depends on the number of existing **Search by captions** objects
2	Name	Text field	Object name	Latin, Cyrillic and special symbols	Search by captions	Case-insensitive string of any symbols. No more than 60 symbols

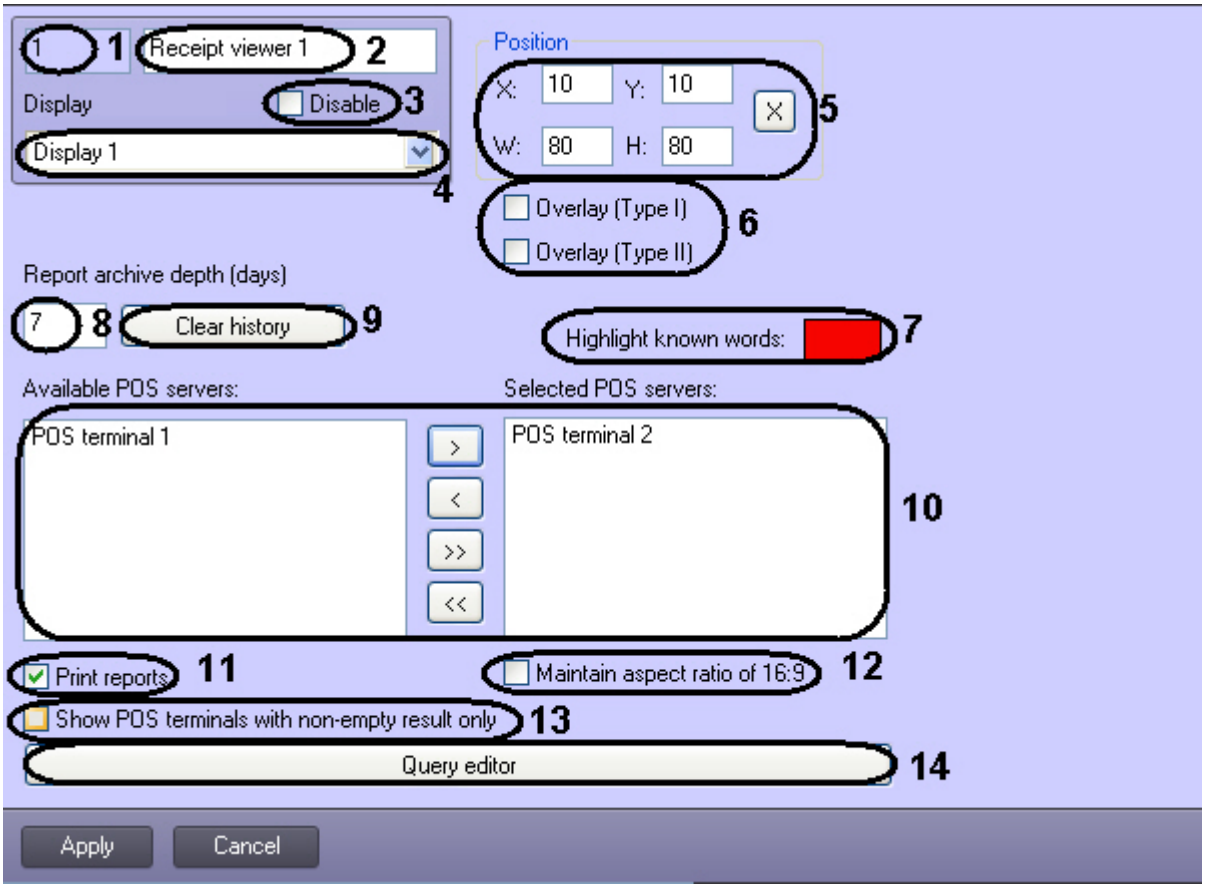
No	Element name	Element type	Description	Data type	Default value	Value range
3	Disable	Checkbox	Object status	Boolean	No	Yes – the object is disabled (not used). No – the object is enabled
4	Screen	Drop-down list	Parent **Screen** object	Names of existing **Screen** objects	Parent **Screen** name	Depends on the number of **Screen** objects
The **Position** group						
5	X	Text field	**X** coordinate of the upper left corner	% of screen width	10	0 to M*100, where M is the number of installed monitors
	Y	Text field	**Y** coordinate of the upper left corner	% of screen height	10	0 to M*100, where M is the number of installed monitors
	W	Text field	Window width	% of screen width	80	0 to M*100, where M is the number of installed monitors
	H	Text field	Window height	% of screen height	80	0 to M*100, where M is the number of installed monitors
	X	Button	Open the size and position sample window	-	-	-
The **Overlay** group						
6	Overlay (Type I)	Checkbox	Overlay I video display mode	Boolean	No	Yes – use Overlay I. No – do not use Overlay I

No	Element name	Element type	Description	Data type	Default value	Value range
	Overlay (Type II)	Checkbox	Overlay II video display mode	Boolean	No	Yes – use Overlay II. No – do not use Overlay II
The **Word highlighting** group						
7	Color	Auto	Word highlighting color	Color palette	Red	Depends on the system color palette
	Color	Double-click	Word highlighting color selection (opening the standard Windows color selection dialog box)	-	-	-
8	Default search depth	Text field	Captioner search depth	Days	7	
9	Clear	Button	Clears the history of user queries	–	–	–
The **Captioner** group						
10	Available captioners	Auto	The list of available captioners	–	–	–
	Selected captioners	Auto	The list of selected captioners	–	–	–
	<, >, >>, <<	Button	Selecting the captioners	–	–	–

No	Element name	Element type	Description	Data type	Default value	Value range
11	Print reports	Checkbox	Print reports	Boolean	Yes	Yes – operator can print query results. No – operator cannot print query results
12	Maintain aspect ratio of 16:9	Checkbox	Maintain aspect ratio of 16:9	Boolean	No	Yes – dispalys archive in 16:9 format. No – displays archive in 4:3 format
13	Show only non-empty fetching	Checkbox	Show captioners with non-empty search results only	Boolean	No	Yes – show captioners with non-empty results only. No – show all captioners

7.1.4 The Receipt viewer object settings panel

The figure shows the **Receipt viewer** object settings panel.



The table describes the elements in the **Receipt viewer** settings panel

No	Element name	Element type	Description	Data type	Default value	Value range
1	Number	Auto	Identification number of the object in the system	Whole positive numbers	-	Depends on the number of **Receipt viewer** objects
2	Name	Text field	Object name	Latin, Cyrillic and special symbols	Receipt viewer	Case-insensitive string of any symbols. No more than 60 symbols
3	Disable	Checkbox	Object status	Boolean	No	Yes – the object is disabled (not used). No – the object is enabled

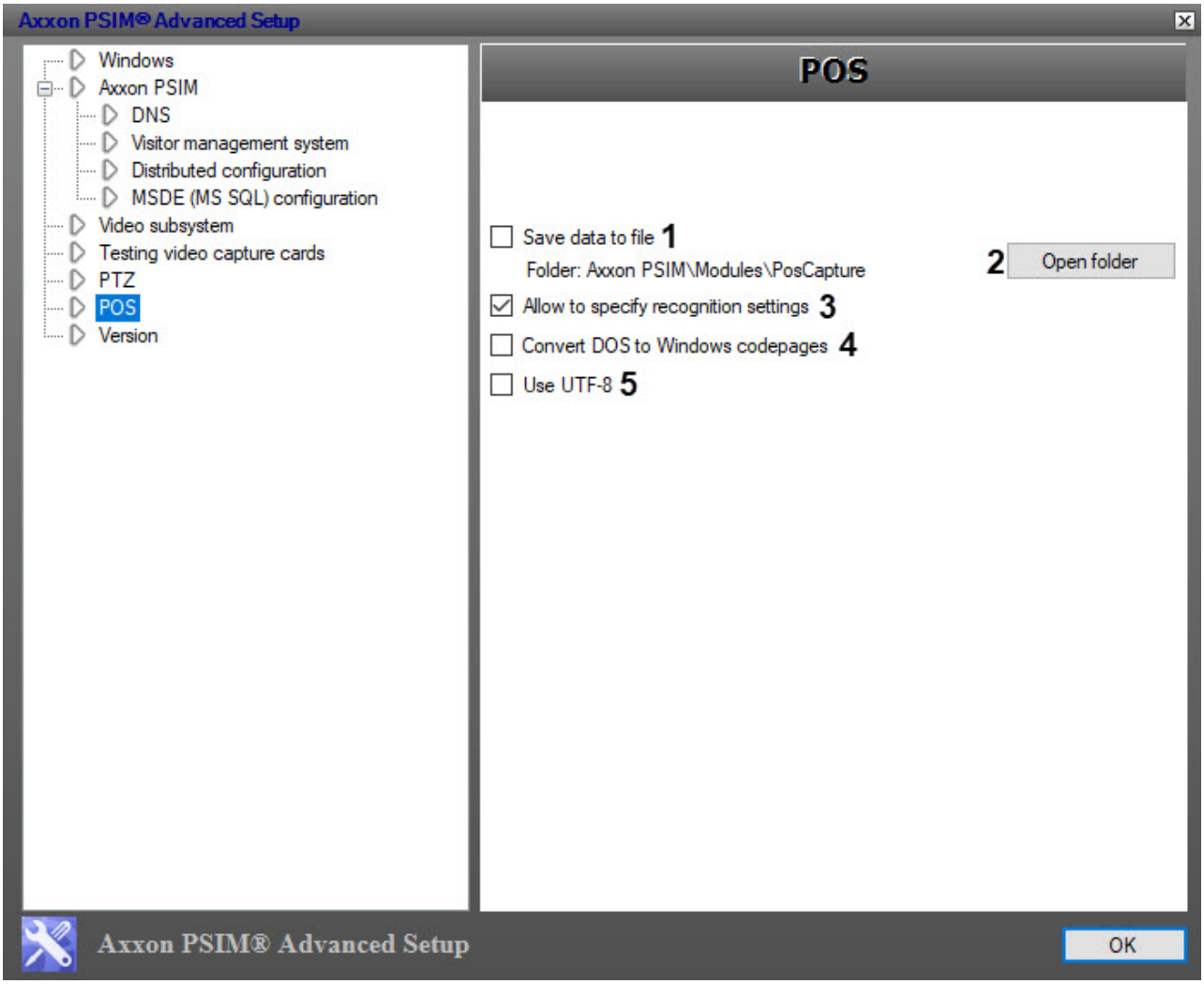
No	Element name	Element type	Description	Data type	Default value	Value range
4	Screen	Drop-down list	Parent **Screen** object	Names of existing **Screen** objects	Parent **Screen** objects name	Depends on the number of **Screen** objects
The **Position** group						
5	X	Text field	**X** coordinate of the upper left corner of the window	% of screen width	10	0 to M*100, where M – number of installed monitors
	Y	Text field	**Y** coordinate of the upper left corner of the window	% of screen height	10	0 to M*100, where M – number of installed monitors
	W	Text field	Window width	% of screen width	80	0 to M*100, where M – number of installed monitors
	H	Text field	Window height	% of screen height	80	0 to M*100, where M – number of installed monitors
	X	Button	Open sample window for visual setting ot position and size	-	-	-
The **Overlay** group						
6	Overlay (Type I)	Checkbox	Overlay I video display mode	Boolean	No	Yes – use Overlay I. No – do not use Overlay I

No	Element name	Element type	Description	Data type	Default value	Value range
	Overlay (Type II)	Checkbox	Overlay II video display mode	Boolean	No	Yes – use Overlay II. No – do not use Overlay II
The **Word highlighting** group						
7	Color	Auto	Word highlighting color	Color palette	Red	Depends on the system color palette
	Color	Double-click	Word highlighting color selection (open standard Windows color selection dialog box)	-	-	-
8	Report archive depth	Text field	Receipts database search depth	Days	7	
9	Clear	Button	Clears the history of user queries	–	–	–
The **POS terminals** group						
10	Available POS terminals	Auto	The list of available POS terminals	–	–	–
	Selected POS terminals	Auto	The list of selected POS terminals	–	–	–
	<, >, >>, <<	Button	Selecting the POS terminals	–	–	–

No	Element name	Element type	Description	Data type	Default value	Value range
11	Print reports	Checkbox	Printing the reports	Boolean	Yes	Yes – operator can print query results. No – operator cannot print query results
12	Maintain aspect ratio of 16:9	Checkbox	Maintain aspect ratio of 16:9	Boolean	No	Yes – dispalys archive in 16:9 format. No – displays archive in 4:3 format
13	Show POS terminals with non-empty results only	Checkbox	Show POS terminals with non-empty search results only	Boolean	No	Yes – show POS terminals with non-empty results only. No – show all POS terminals
14	Query editor	Button	Open the user query editor	–	–	–

7.1.5 The settings panel for the POS sections using the tweaki.exe utility

The external view of settings panel for the **POS** sections is shown in the following figure.



Description of parameters for settings the **POS** section is presented in the table.

№	Parameter	Method for setting the parameter value	Parameter description	Symbol used	Default value	Value range
1	Save data to file	Is identified by the check mark	Enabling and disabling function of creating lof-files of POS terminals	Boolean type	No	Yes – data received from POS-terminals save to log files. No – log fille is not created.

№	Parameter	Method for setting the parameter value	Parameter description	Symbol used	Default value	Value range
2	Open folder	Press the button	Button is designed for going to the folder where log-files of POS terminates are stored	-	-	-
3	Allow to specify recognition settings	Is identified by the check mark	Enabling or disabling the possibility to edit the parcer templates	Boolean type	No	Yes – it is possible to edit parcer templates. No – it is not possible to edit parcer templates
4	Convert DOS to Windows codepages	Is identified by the check mark	The checkbox is set if the POS terminal sends data in DOS code	Boolean type	No	Yes – data sends in DOS code and converts to the Windows codepages. No – data sends in correct code and converting is not required
5	Use UTF-8	Is identified by the check mark	Enabling or disabling the possibility to use UTF-8	Boolean type	No	Yes – it is possible to use UTF-8. No – it is not possible to use UTF-8

7.2 Appendix 2. Connecting the POS-server to the POS terminal

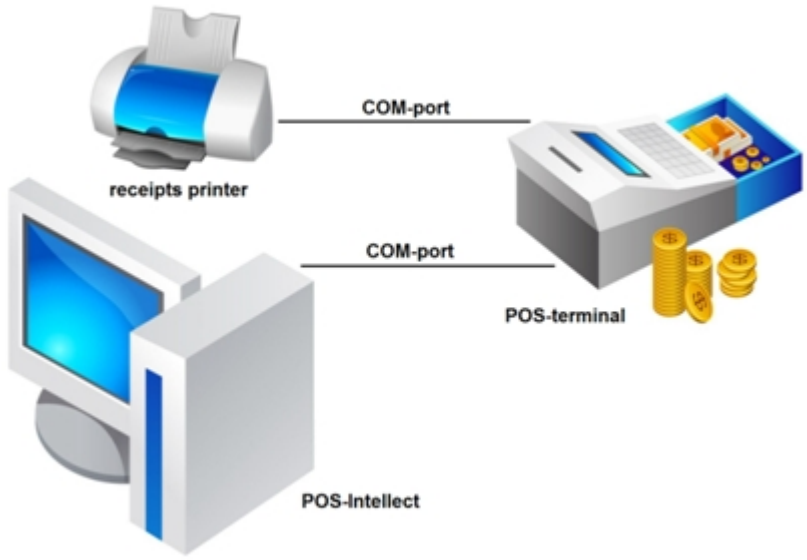
Depending on the POS terminal hardware and software, it can be connected to the POS-server with installed *POS PSIM* software using one of the following ways:

1. POS terminal COM-port;
2. POS terminal receipts printer port;
3. LAN.

> **Note.**
>
> Consult the dealer who installed your POS terminals about available connection options.

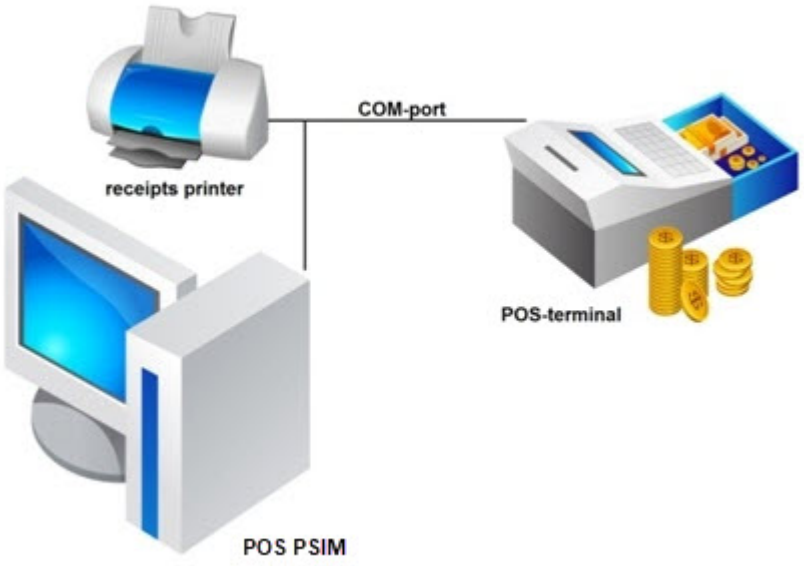
7.2.1 Connecting the POS-server to the COM-port of the POS-terminal

The POS-server can be connected to the POS-terminal COM-port, if the POS-terminal allows duplication of POS-operations data to a free COM-port. Connect the free COM-port of the POS-terminal to the POS-server's COM-port.



7.2.2 Connecting the POS-server to the POS-terminal receipts printer port

If the POS-server cannot be connected to a free COM-port of the POST-terminal, connect it to the POS-terminal's receipts printer port.



To use this connection option, make sure that:

1. The receipts printer supports the RS-232 standard.
2. The POS-terminal sends data to the printer in text format.

Use Y-cable to connect the POS-server to the receipts printer.

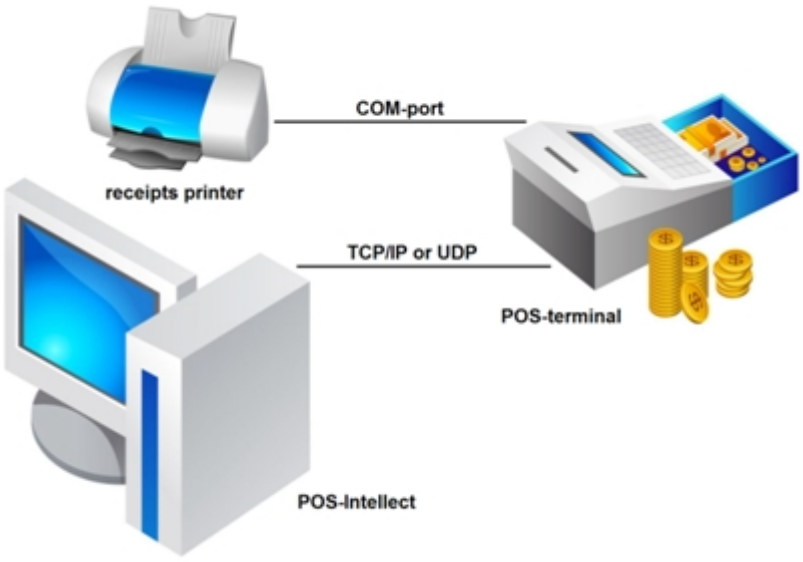


Attention!

Unplug all devices from the mains prior to connecting the POS-server to the POS-terminal serial ports. Failing to do so may cause severe damage to the hardware.

7.2.3 Connecting POS-terminals via LAN

The POS-terminal can be connected to the POS-server via the local area network, if the POS-terminal supports TCP/IP or UDP data transfer protocols.



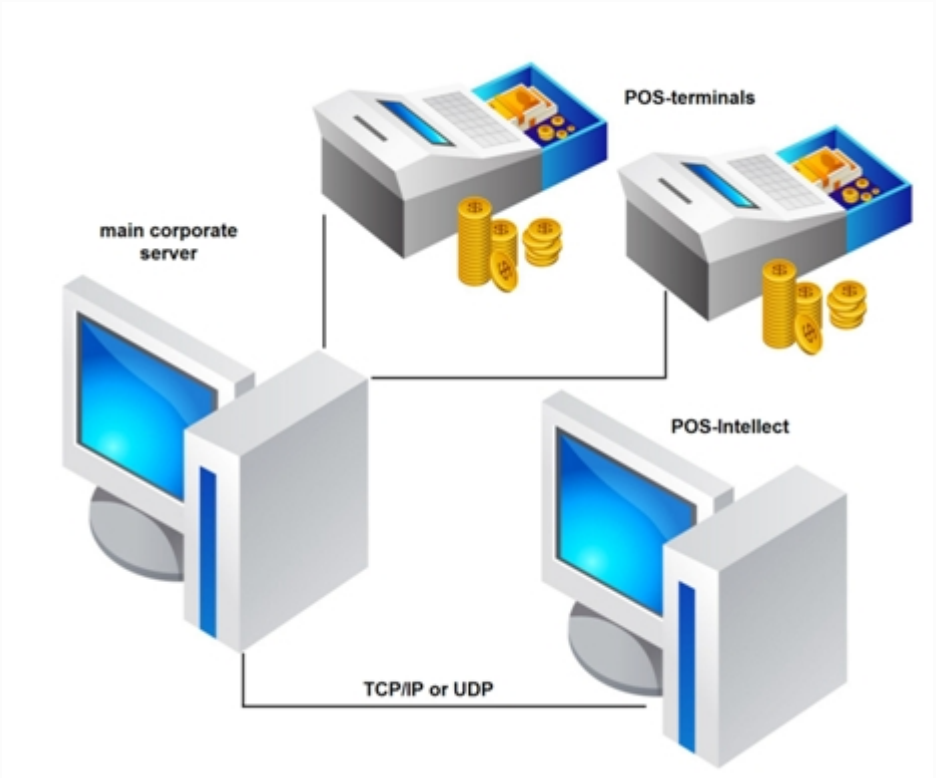
To use this connection option, make sure that:

1. the POS-terminal is connected to the LAN router;
2. the POS-terminal is set up for sending POS-operations data to LAN;

3. the LAN router is connected to the POS-server

Note.

The main corporate server connected to the POS-server via LAN can be used to route the data from the POS-terminals.



7.2.4 Auxiliary communication devices

On the page:

- RS-232 extensions
- Devices installed on the POS-server

RS-232 extensions

If the RS-232 interface is used, the distance between POS-terminals and the POS-server may be longer than the maximum cable length. The following RS-232 extenders can be used in this case:

1. RS-232 repeaters;
2. RS-232 to RS-422/485 converters;
3. RS-232 to Ethernet converters.

> **Note.**
>
> If the RS-232 to Ethernet converter is used, the POS-terminals should be connected to the POS-server via LAN.

Devices installed on the POS-server

The number of POS-terminals to be connected to POS-server COM-ports may exceed the number of available COM-ports. The following communication devices can be installed on the POS-server in this case:

1. multiport RS-232/422/485 serial cards;
2. multiport converters from RS-232/422/485 to USB (Serial-USB);
3. multiport converters from RS-232/422/485 to Ethernet (Serial-Ethernet).

> **Note.**
>
> The communication device selection depends on the type of connection between POS-terminals and the POS-server.

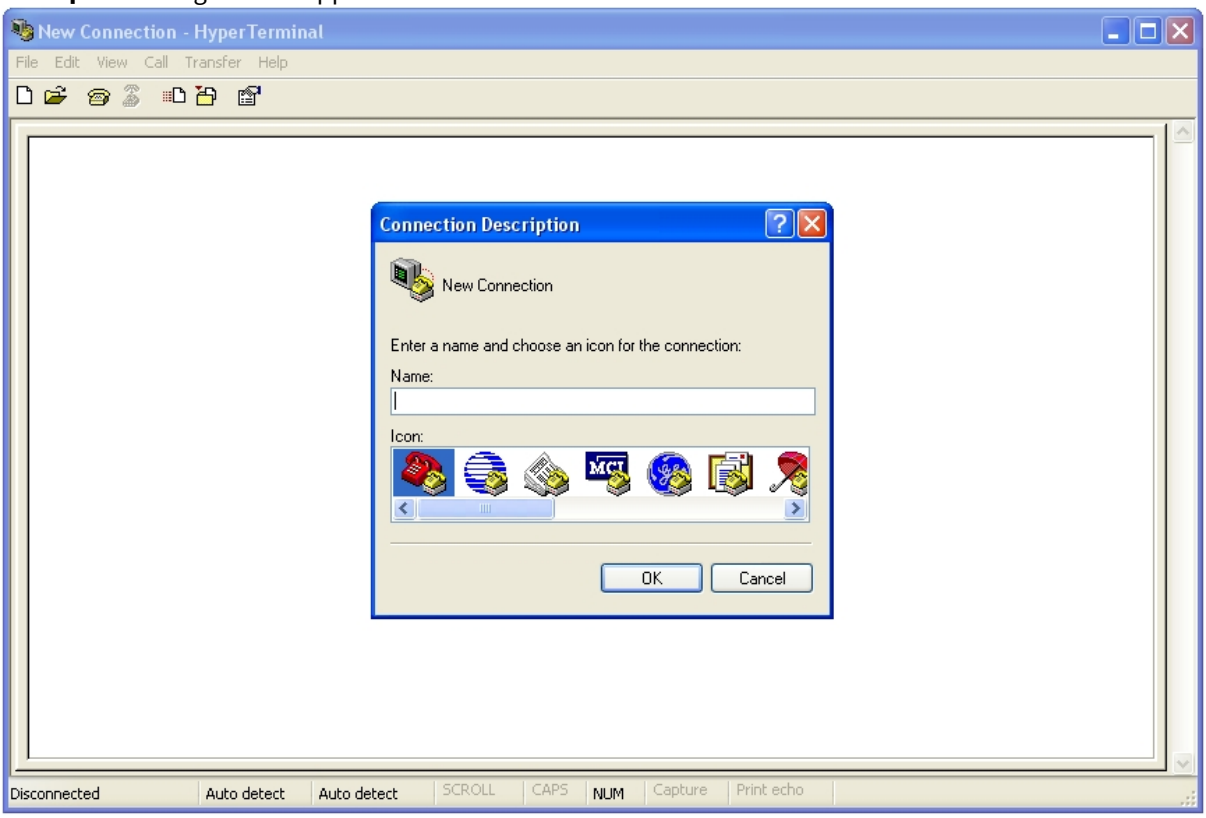
7.2.5 Testing the connection between the POS-server and the POS-terminal

To test the connection of the POS-server to POS-terminals, use the HyperTerminal utility. This program is free and not included in Windows OS.

> **Note.**
>
> See the official HyperTerminal documentations for its usage details.

To test the POS-terminal connection, do the following:

1. Launch **HyperTerminal** on the POS-server. The utility interface window will open, and the **Connection Description** dialog box will appear.



2. In the **Name** field, enter a meaningful name for the connection, then click **OK**.

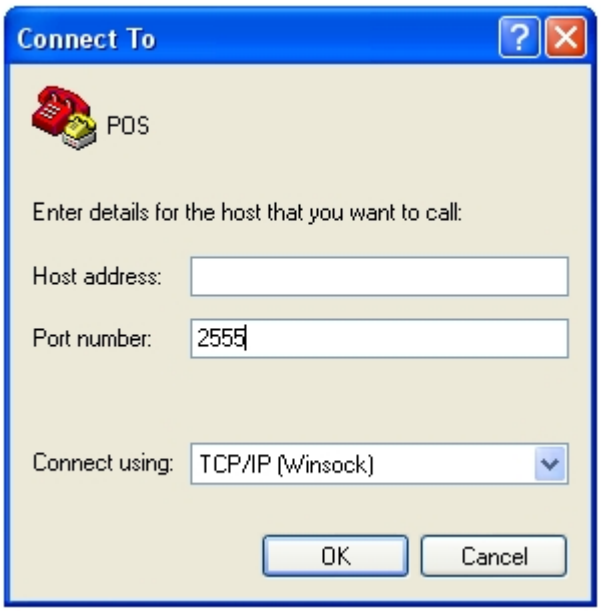


3. The **Connection** window opens. Select a network type in the **Connect using** drop-down list.



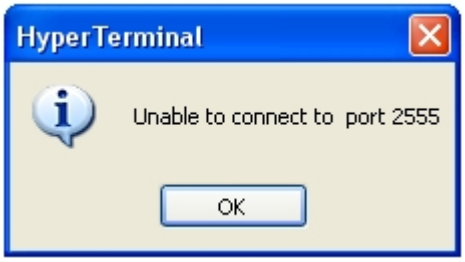
> **Note.**
>
> Select the connection type according to the POS-server to POS-terminal connection.

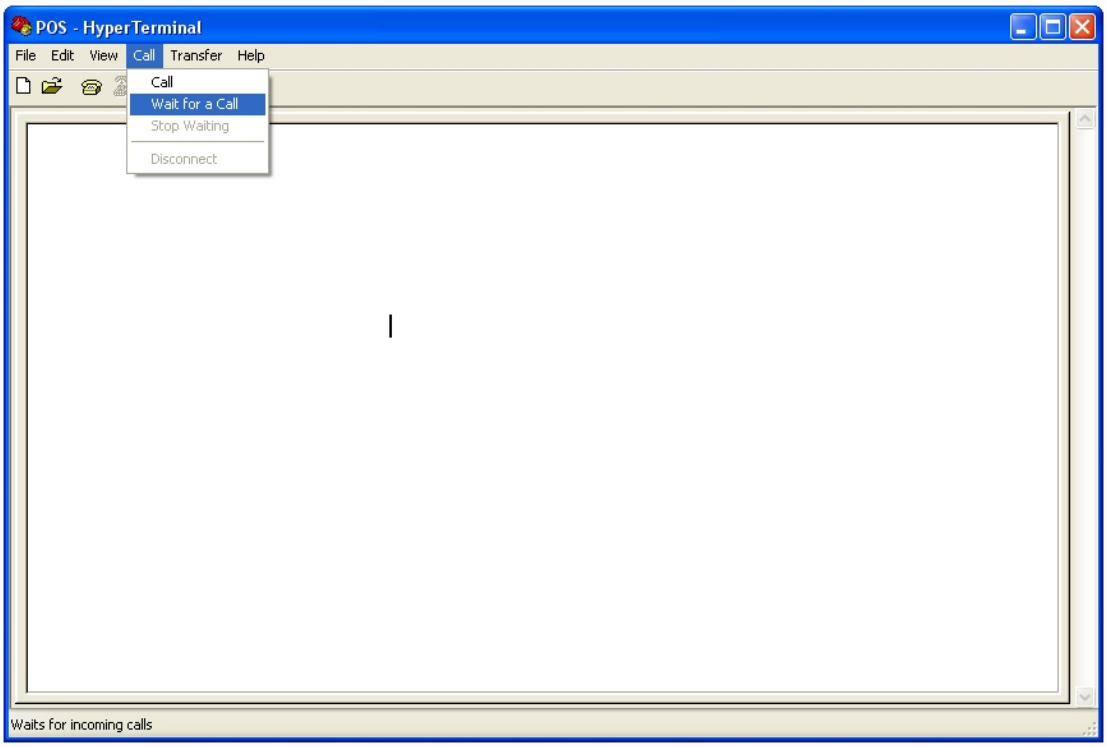
4. If **TCP/IP (Winsock)** interface type is selected, then select the local port number in the **Port** field and click **OK**.



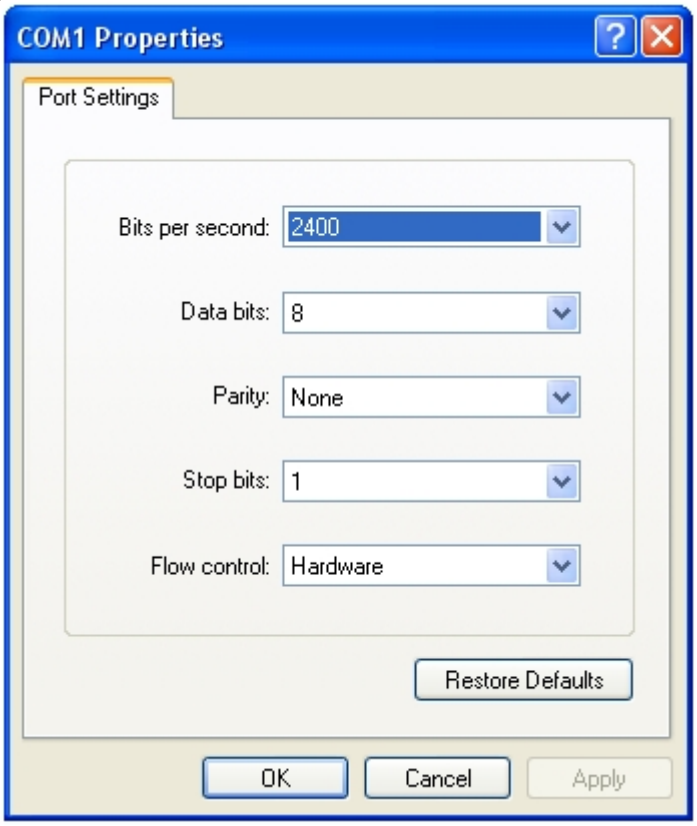
> **Note.**

An information box will appear with the following message: Unable to connect to port 2555. Click **OK** to close this box, then click **Wait for a Call** in the **Call** menu.





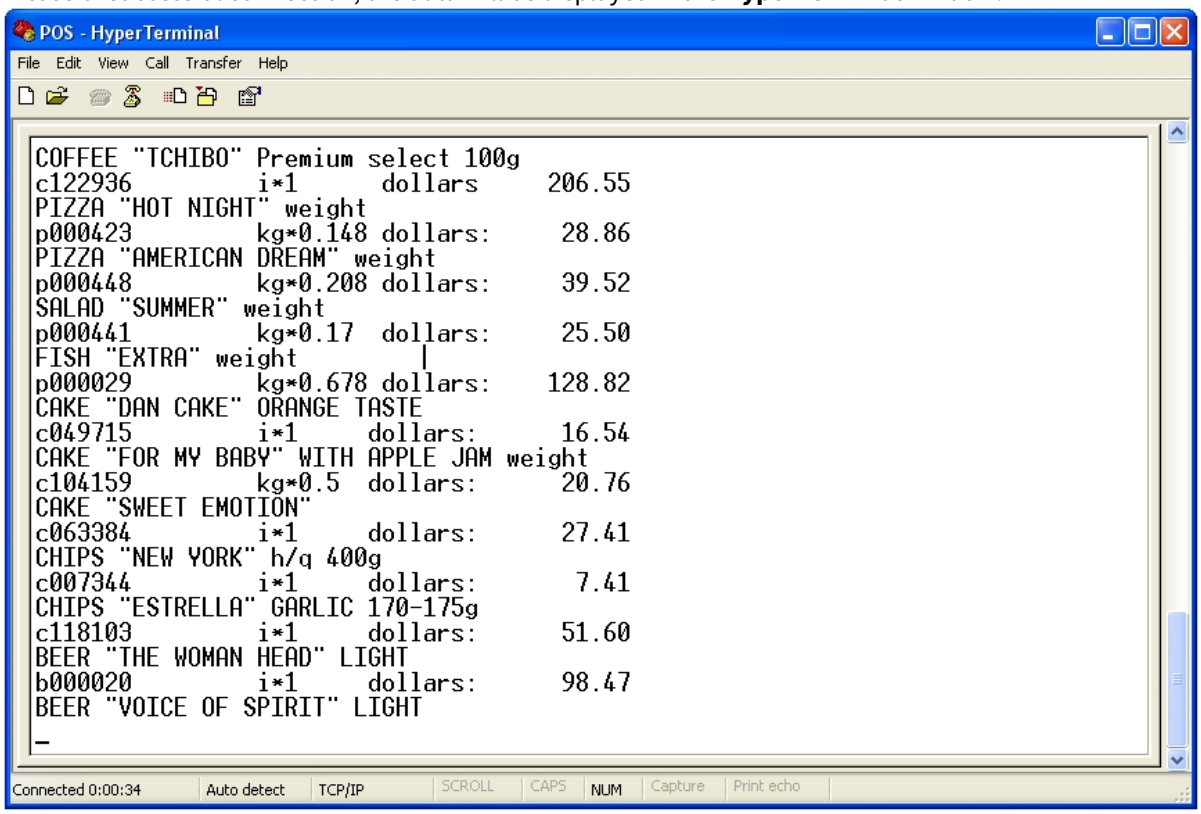
5. If the COM interface type is selected, click **OK**. In the **COM Properties** window that opens enter the required parameters and click **OK**.



> **Note.**
>
> The COM connection settings should meet the POS-terminal data transfer settings.

6. Start sending data from the POS-terminal to the POS-server

7. In case of successful connection, the data will be displayed in the **HyperTerminal** window.



8. In the main menu, select **Call**, then **Disconnect** to disconnect from the POS-terminal
9. To test the connection to all POS-terminals, select **New connection** in the **File** menu and repeat steps 2 to 8.
10. Close the HyperTerminal utility.

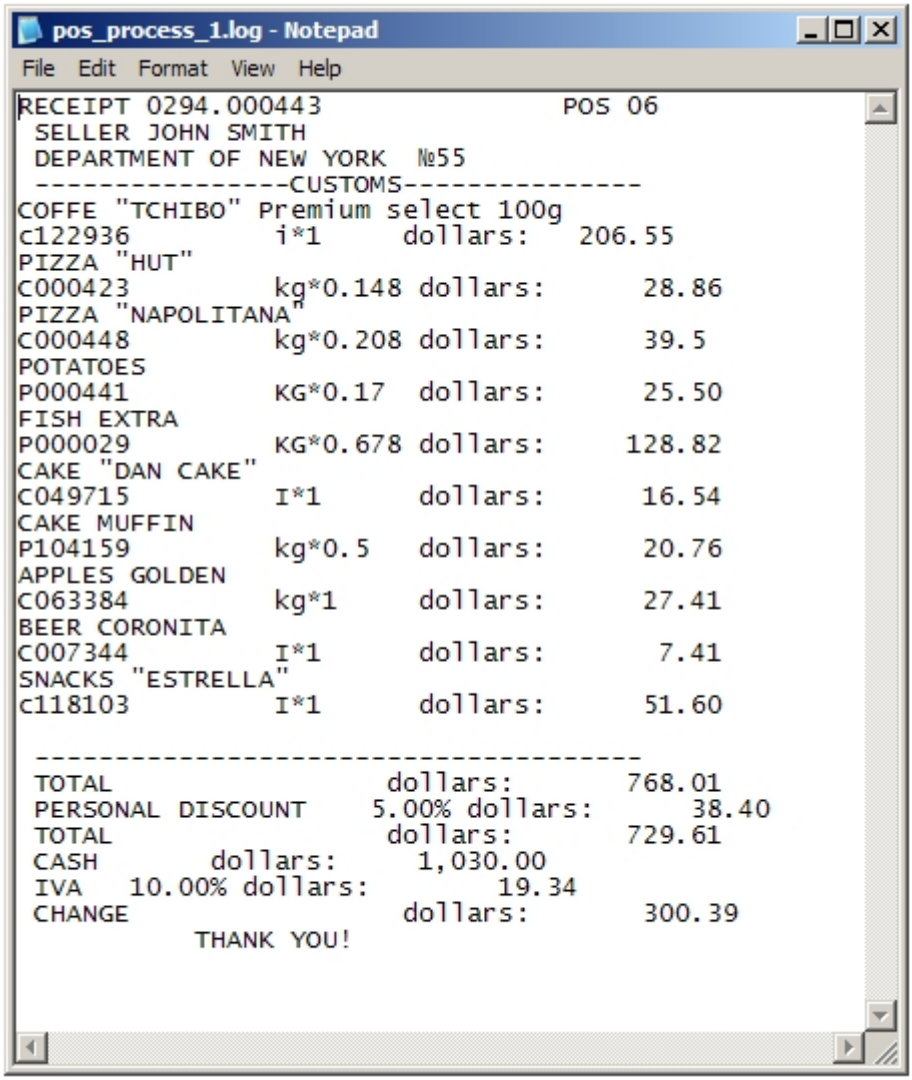
Testing POS-server connection to POS-terminals is complete.

7.3 Appendix 3. Log files

7.3.1 Introduction to log files

Log files are text files containing the current data on *POS PSIM* operation.

Figure below shows an example of a log file.

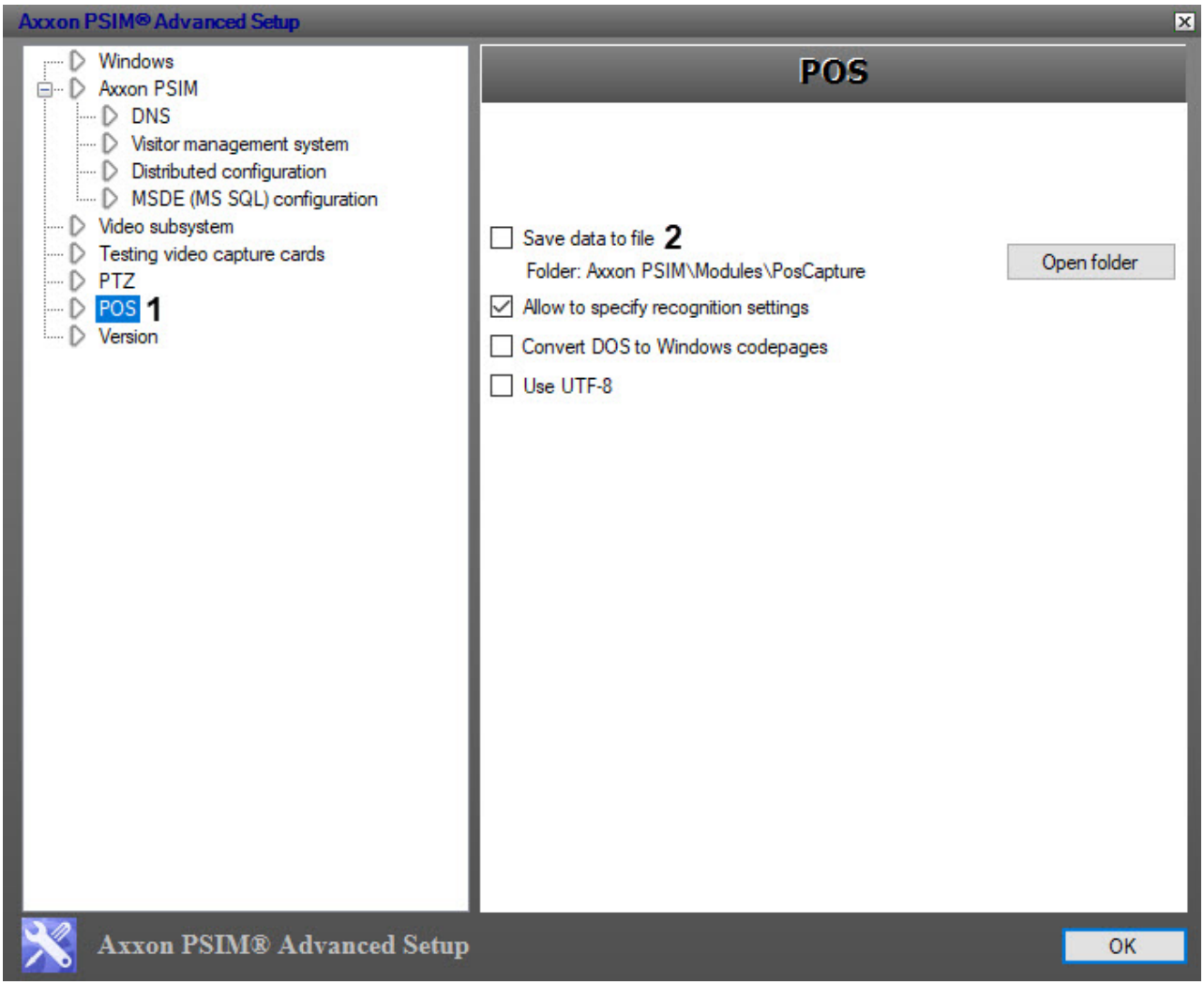


The system creates log files automatically in the ***<POS PSIM* program folder>\Modules\PosCapture** folder.

7.3.2 Enabling and disabling the logging function

Logging can be enabled or disabled using the tweaki.exe utility.

To enable (disable) logging, check (uncheck) the **Save data to file** checkbox (**2**) in the **POS** tab (**1**).



Note.

Log file size is limited to 1 megabyte.

7.3.3 Viewing log files

To view log files, open the <*POS PSIM* program folder>\Modules\PosCapture folder in Windows, or click the **Open folder** (**2**) button in the **tweaki.exe** utility window in the **POS** tab (**1**).

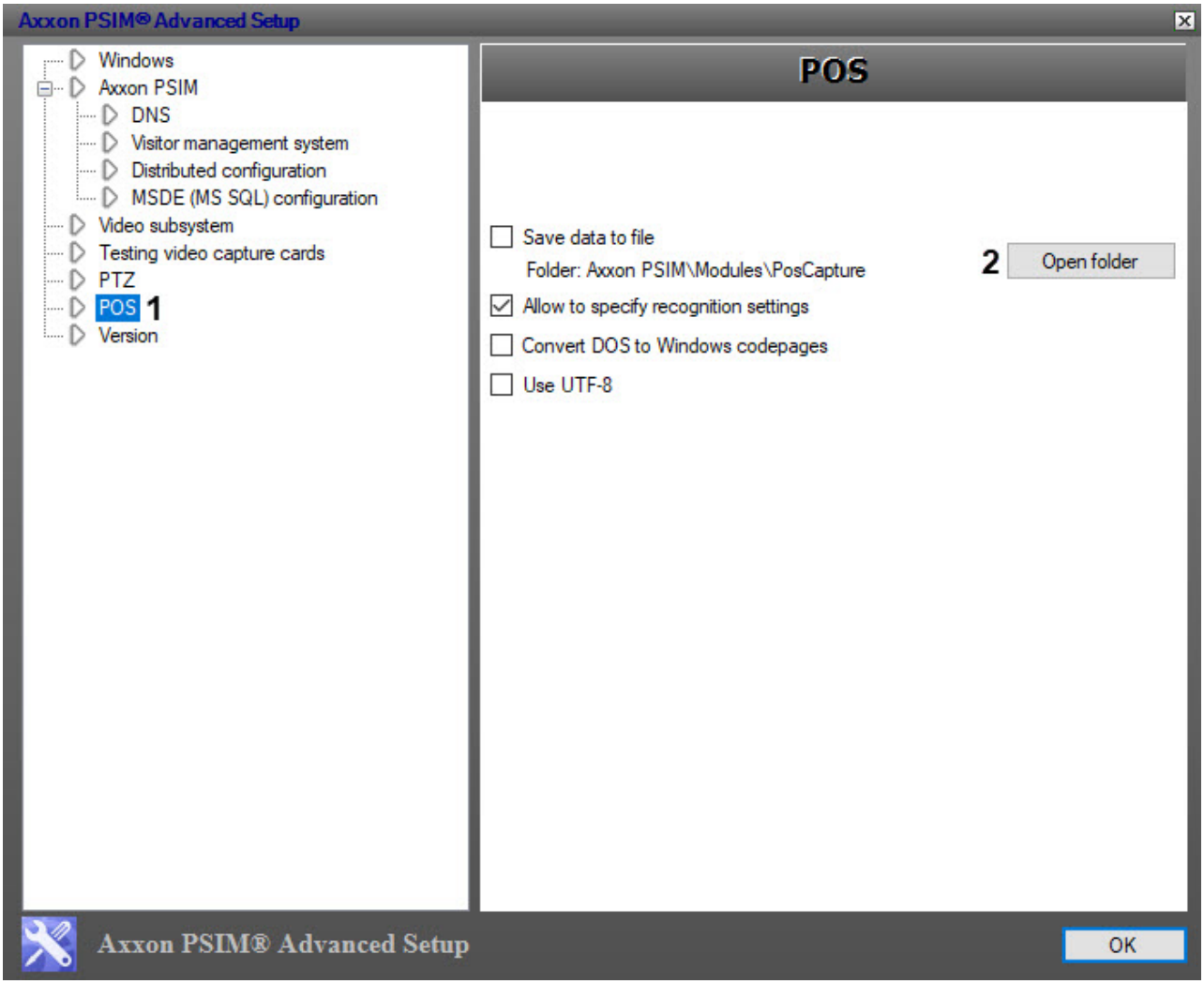
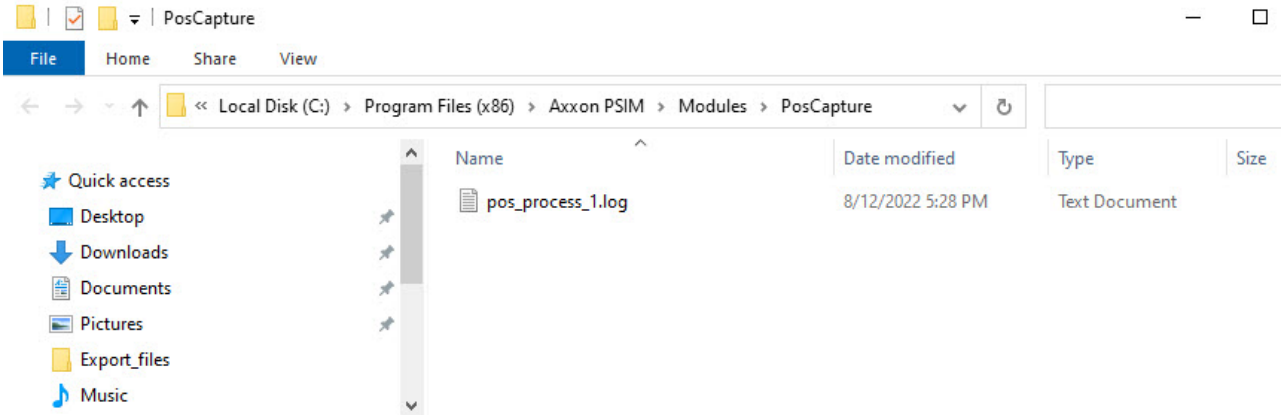
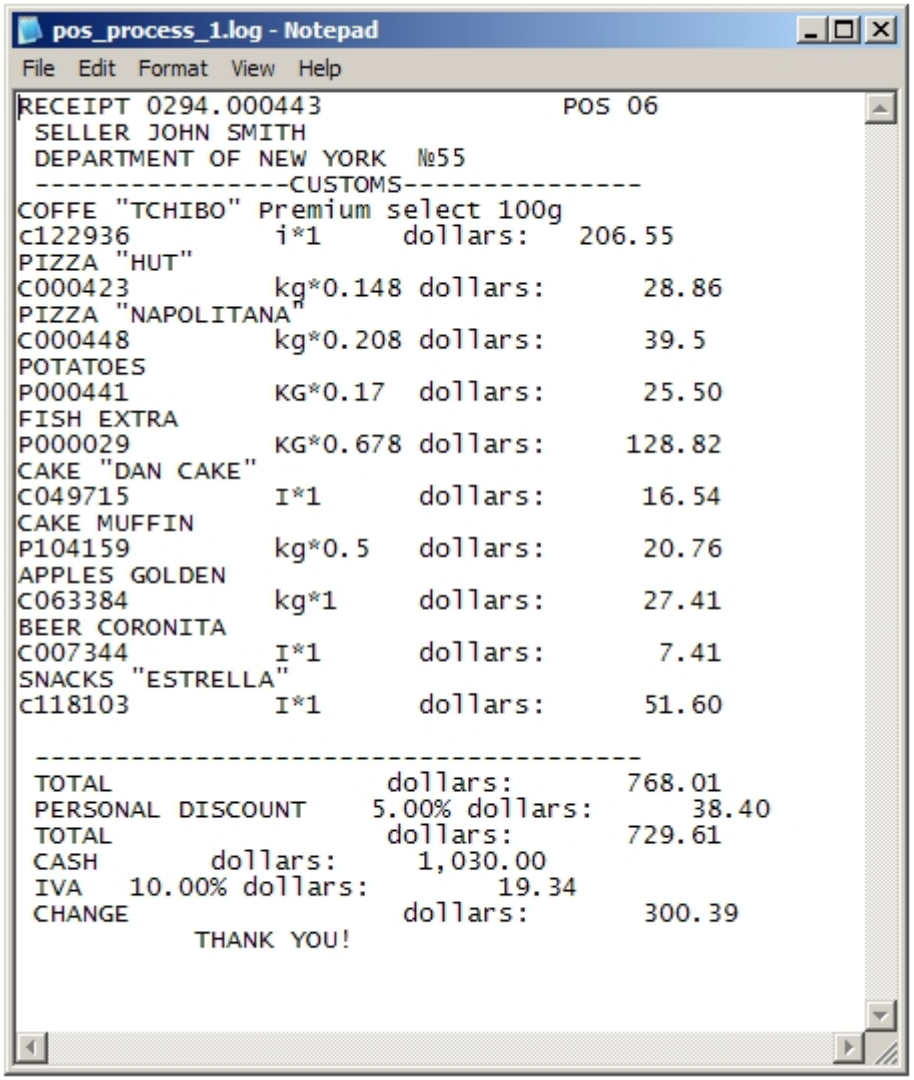


Figure below shows an example of a log files folder.



Any common text editor can be used to view the log files, for example, the Notepad included in Windows.



7.4 Appendix 4. The ReaderSrv utility

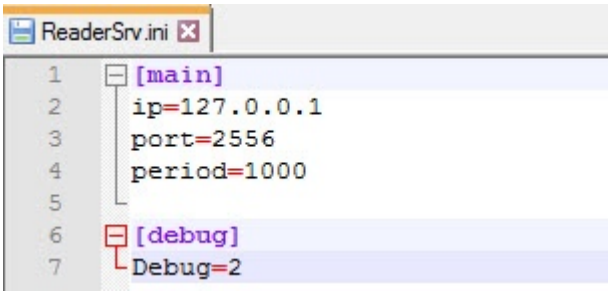
7.4.1 General information on the ReaderSrv utility

The ReaderSrv utility reads the symbols from the keyboard (or other input devices, such as the bar code reader) and sends them over the network to the address specified in the configuration file and to the port by clicking the Enter key or by the timeout specified in the ReaderSrv.ini configuration file.

The ReaderSrv utility is located in the <*POS PSIM* installation directory>\Modules\Pos\Scanners\Metrologic MS9500 Voyager folder.

7.4.2 Setting up and using the The ReaderSrv utility

The ReaderSrv utility settings are stored in the ReaderSrv.ini utility configuration file which is located in the <*POS PSIM* installation directory>\Modules\Pos\Scanners\Metrologic MS9500 Voyager folder.



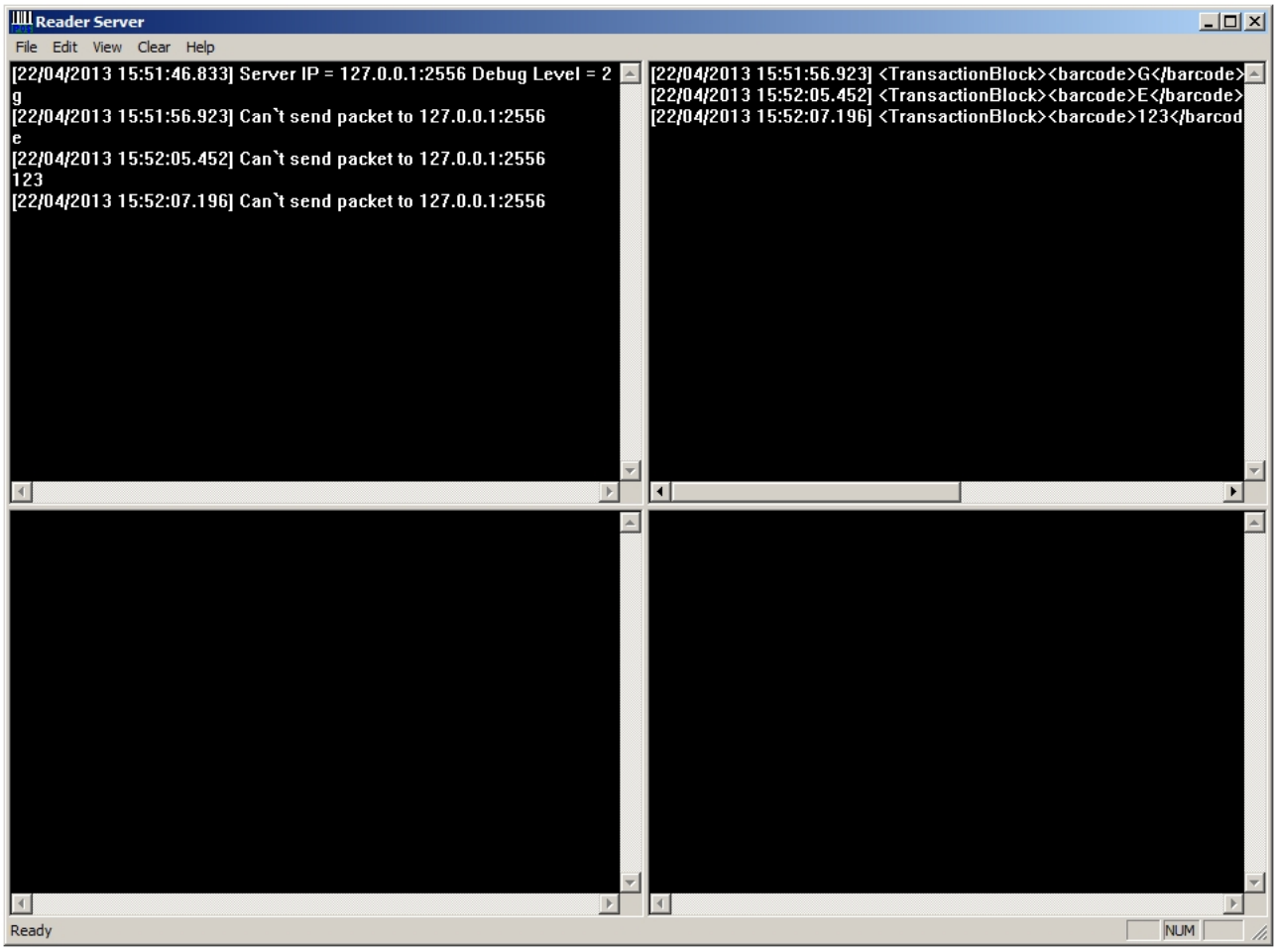
- The **Ip** and **port** parameters are mandatory and are necessary for the utility to transfer data over the network to the specified ip-address and port number.
- The **Period** parameter sets the time in milliseconds after which the specified characters will be automatically transferred.

> **Note**
>
> If the **0** value is set, then the specified characters will be transferred only by pressing the Enter key.

- The **debug** parameter is optional. If it is not set, its value is automatically set to 0. If the **debug** parameter is zero, the utility window is not displayed.

To start ReaderSrv, run the ReaderSrv.exe file. The utility is launched in hidden mode. To display the **Reader Server** window double click 

icon in the Windows notification area.



The **Reader Server** window is divided into the following parts:

1. In the upper left section of the window error messages and other information on program functioning will be displayed. The **debug** parameter value must not be less than 1.
2. In the upper right section of the window the XML formed for sending is displayed. The **debug** parameter value must not be less than 2.
3. In the bottom right section of the window the readed bar codes and all information received from the keyboard or other reader, simulating the keyboard, are displayed. The **debug** parameter value must not be less than 3.

To hide the window, click  in its upper right corner. To display the window again, double click  icon in the Windows notification area (system tray).

7.5 Appendix 5. The cash_forward utility

7.5.1 General information on the cash_forward utility

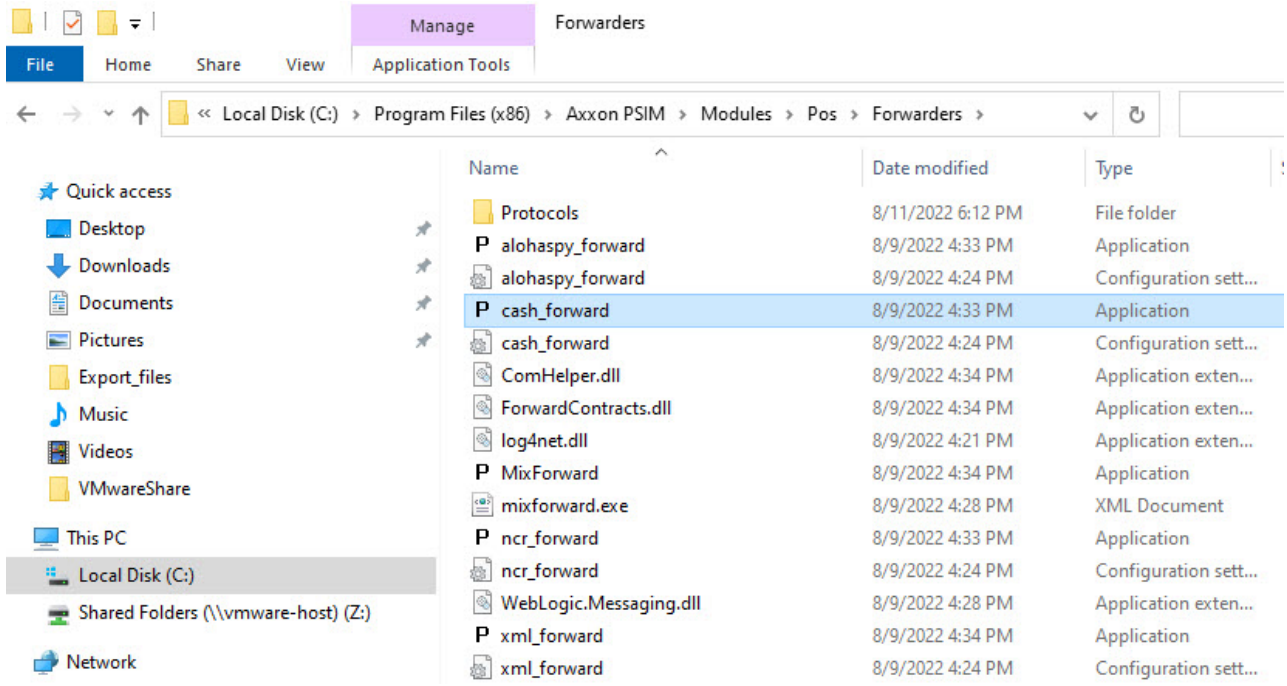
The cash_forward utility routes the text data packages from POS-terminals to the server IP-address and port specified in the configuration file.

Text packages are received using the Cash Control POS-operations control system integration protocol via Ethernet networks using TCP/IP or UDP protocols. The received packages are sent to the POS-server using the TCP/IP protocol.

The utility can do the following conversions on the fly:

1. Convert DOS to Windows codepage.
2. Convert text to XML.

The cash_forward utility operates as a regular executable file and is located in the <*POS PSIM* program folder>\Modules\Pos\Forwarders\ folder.

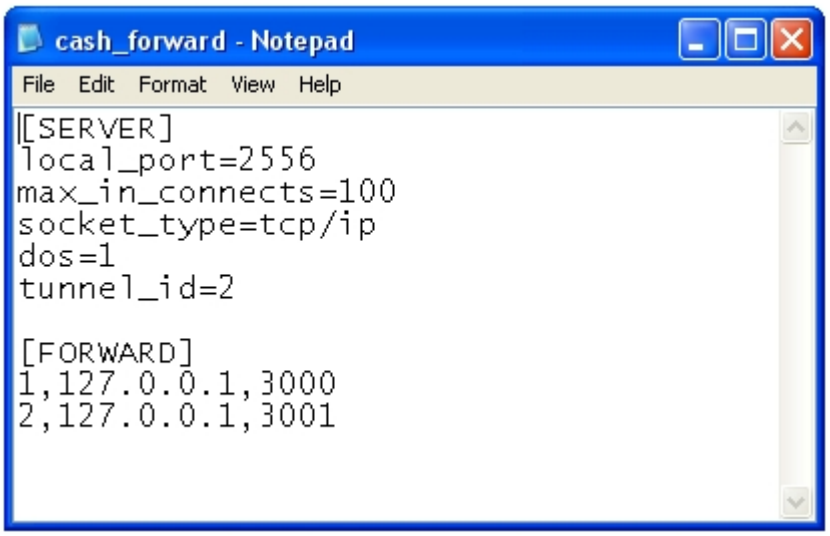


7.5.2 cash_forward setup

Each package received from a POS-terminal describes single registered event and starts from the **#CREP** protocol identifier. The package can also contain the routing label by which the utility determines the IP-address and port of the POS-server according to the cash_forward.ini configuration file.

Note. Routing identifier corresponds to the identification number of the POS-terminal.

The cash_forward.ini file should be located in the same folder as the cash_forward.exe file for utility's correct operation.



The table describes sections and parameters of the configuration file.

Section	Parameter	Description	Data type	Default value	Value range
[SERVER]	local_port	Local port to be processed by the utility	Whole positive numbers	-	0 to 65535
	max_in_connects	Maximum number of incoming connections to be processed simultaneously	Whole positive numbers	-	Depends on the number of POS-terminals
	socket_type	Network protocol for POS-terminal data transfer	-	tcp/ip (if the value is not set or is invalid)	tcp/ip – data transfer using TCP/IP, udp – data transfer using UDP
	dos	Text conversion from DOS to Windows codepage	Boolean	-	0 – data is not converted, 1 – data is converted

Section	Parameter	Description	Data type	Default value	Value range
	tunnel_id	Forwarding all incoming packages to the selected POS-server irrespective of package routing labels	Routing label in the [FORWARD] section corresponding to the selected POS-server	Data is redirected according to the package routing label	Depends on the number of identifiers listed in the [FORWARD] section
	xml_convert	Text conversion from G2 to XML format	Boolean	-	0 – data is not converted, 1 – data is converted
[FORWARD]	Identification string	Sets the correspondence between the routing label and POS-server IP-address/port	Routing label, IP-address, port number	-	-

Note.

The local_port number corresponds to the settings of the network connection of POS-terminals to the Cash Control POS-operations control system.

Attention!

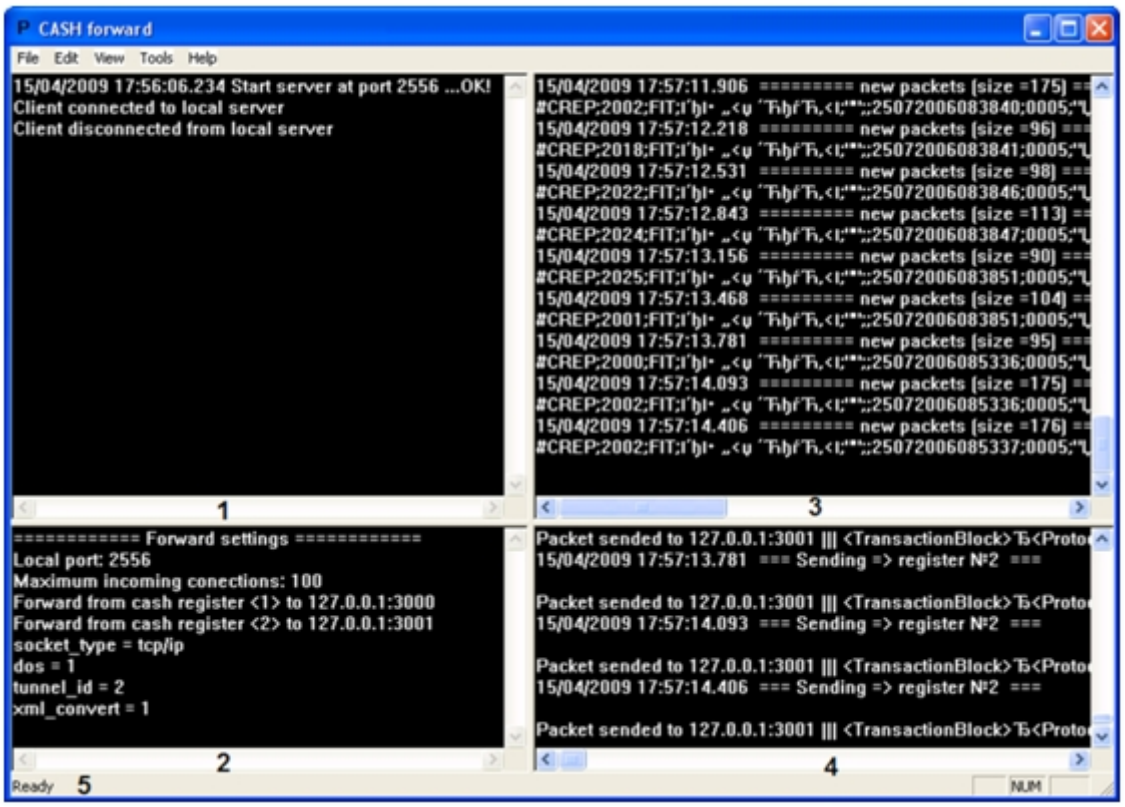
If the routing label of a package has no match in the utility configuration file, and tunnel_id is not set, the package is deleted.

7.5.3 Using the cash_forward utility

Automatic operation

When the **cash_forward.exe** file runs, the **CASH forward** icon appears in the system tray. In case of correct configuration settings in the **cash_forward.ini** file, the data packages sent to the local port from POS-terminals are routed automatically to POS-servers.

To view the incoming and forwarded data in the utility window, double-click its icon in the system tray.



The table describes the elements in the **CASH forward** window.

No.	Description
1	Information about the connection to the fiscal register of the local port specified in the **cash_forward.ini** configuration file
2	Routing settings specified in the **cash_forward.ini** file
3	Data packages received from POS-terminals
4	Information about data package forwarding to POS-servers
5	Utility status bar (enable/disable in the **View > Status Bar** menu)

Testing the connections

The user can send a test signal to POS-servers whose IP-address and port are specified in the **cash_forward.ini** file.

To send the test signal, in the **Tools** menu of the utility, select **Send "test"**. The following information will be displayed in tile 4 of the utility window: the executable file name (cash_forward.exe), the local port number processed by the utility, and the TEST SIGNAL text message.

To close the **cash_forward** utility and stop routing of data packages, select **Exit** in the **File** menu.

> **Note.**
>
> Clicking the  button in the upper right corner of the window closes the window, but the routing process continues.

7.6 Appendix 6. The MixForward utility

7.6.1 General information on the MixForward utility

The MixForward utility routes the data packages received from POS-terminals to the IP address and port of the POS server in accordance with the settings specified in the configuration file. In addition, the utility allows you to establish a connection between a POS Server and a remote Server providing data.

The utility can receive the data packages from POS-terminals via the following network interfaces:

1. RS-232.
2. UDP.
3. TCP/IP.

The received packages are forwarded to the IP address and port of the POS server via the TCP/IP interface.

> **Note**
>
> - The IP-address and port number of the POS-server are determined using the routing id specified in the data package from the POS-terminal.
> - The MixForward utility also allows routing of data packages received from metal detectors.
> - The MixForward utility works with *Axxon PSIM* and *Axxon One*.

The MixForward utility is launched using the **MixForward.exe** executable file located in the <*POS PSIM* installation directory>\Modules\Pos\Forwarders\ folder.

The utility converts data from POS-terminals to XML protocol using the dynamic library plug-ins. These plug-ins are located in the <*POS PSIM* installation directory>\Modules\Pos\Forwarders\Protocols\ folder.

> **Note**
>
> The protocol in use is set by the **ProtocolName** parameter in the **mixforward.exe.xml** file (see Setting up the MixForward utility).

Plug-in settings files are located in the <*POS PSIM* installation directory>\Modules\Pos\Forwarders\Protocols\Settings\ folder.

Transformation files are located in the <*POS PSIM* installation directory>\Modules\Pos\Forwarders\Protocols\Transformations\ folder.

If logging is enabled, the log files will be located in the <*POS PSIM* installation directory>\Modules\Pos\Forwarders\Protocols\Logs\ folder.

Temporary files created by some plug-ins will be located in the <*POS PSIM* installation directory>\Modules\Pos\Forwarders\Protocols\Temp\ folder.

7.6.2 Setting up the MixForward utility

General settings of the MixForward utility

The MixForward utility is configured using the **mixforward.exe.xml** configuration file. The configuration file should be located in the same directory with the **MixForward.exe** executable file. You can edit the configuration file using any text editor.

The configuration file allows you to set up the following processes:

1. Connecting to POS terminal or third-party software.
2. Processing the data transfer protocol from the POS-terminal.
3. Logging the routing process.
4. Forwarding data to the IP-address and port of POS-server.
5. Receiving the packages with titles from multicast titles broadcast.

mixforward.exe.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<mix_forward_configuration>
<!-- InputPortType - тип порта для приема данных. Возможные значения :
TCP/UDP/RS232/MSMQ/PLUGIN/WEBSERVICE/JMS/TCPCLIENT -->
  <InputPortType>TCPCLIENT</InputPortType>
<!-- ServerPort - номер порта, если InputPortType является TCP,UDP,WEBSERVICE -->
  <ServerPort>8000</ServerPort>
<!-- MultiCast - включить multicast, если InputPortType является UDP -->
  <MultiCast>true</MultiCast>
<!-- MultiCastIP - multicast IP address -->
  <MultiCastIP>224.5.6.7</MultiCastIP>
<!-- ProtocolName - имя протокола для использования -->
  <ProtocolName>OKOPlugin</ProtocolName>
<!-- LogFileMaxSize - максимальный размер лог файлов в байтах -->
  <LogFileMaxSize>5242880</LogFileMaxSize>
<!-- LogInput - включить лог получаемых данных. -->
  <LogInput>true</LogInput>
<!-- PingTime - период времени посылки контрольного пакета в секундах -->
  <PingTime>10</PingTime>
<!-- PrivateLog - разрешить плагину писать свой детальный лог (только для отладки!) -->
  <PrivateLog>false</PrivateLog>
<!--Настройки ком порта если InputPortType является RS232
PortName - название порта
BaudRate - скорость
RtsEnable - сигнал RTS , 1 - включен, 0 выключен
DtrEnable - сигнал DTR , 1 - включен, 0 выключен
-->
  <RS232_settings PortName="COM3" BaudRate="9600" RtsEnable="1" DtrEnable="1"/>

<!--Настройки MSMQ, если InputPortType равен MSMQ
Queue.Path - путь к очереди
Queue.Terminal - если указан, для этой очереди подставляется данный номер терминала
ReconnectTimeout, с - время, по истечении которого производится попытка восстановления связи, если сообщения
не приходят
NoTimeFilter - если true, сообщения очереди не фильтруются по времени
DeleteMessages - если true, сообщения удаляются из очереди по прочтении
-->
  <MSMQ_settings ReconnectTimeout="120" NoTimeFilter="false" DeleteMessages="false">
    <Queue Path=".\Private$\cctv" Terminal="13"/>
    <Queue Path=".\Private$\cctv2"/>
    <!--<Queue Path="FormatName:Direct=TCP:10.0.1.69\Private$\cctv2" Terminal="14"/>-->
  </MSMQ_settings>

  <JMS_settings Url="t3://lip335.ikea.com:7004" Login="" Password="">
  </JMS_settings>
```

The table describes the configuration elements of MixForward utility.

Element name	Element description	Element attribute	Attribute description	Value range
InputPortType	POS-terminal data transfer protocol	-	-	RS232 UDP TCP TCPCLIENT MSMQ PLUGIN WEBSERVICE JMS
ServerPort	Local port number, if InputPortType is TCP or UDP	-	-	From 0 to 65535
MultiCast	Enables the function of receiving multicast messages if the UDP interface is selected in the InputPortType	-	-	True – function of multicast messages receiving is enabled False – function of multicast messages receiving is disabled
MultiCastIP	Address to which multicast messages from external POS program will be sent in case of the UDP interface is selected in InputPortType parameter	-	-	IP address to which the multicast messages sending is performed
ProtocolName	Name of the used data transfer protocol	-	-	-
LogFileMaxSize	Maximum log file size, bytes	-	-	-
LogInput	Enables or disables the received data log	-	-	true - the log is enabled false - the log is disabled

Element name	Element description	Element attribute	Attribute description	Value range
PingTime	The period of test package sending in seconds	-	-	Up to 60 seconds
PrivateLog	Enables or disables the creation of its own detailed log by the plugin (for debugging only!)	-	Not available for all plugins	true - the plugin will keep its detailed log false - the plugin will not keep its detailed log
RS232_settings	A group of elements. COM-port settings if InputPortType is RS-232	PortName	Available COM-port name	Depends on the number of available ports
		BaudRate	Supported bit rate, bit/s	Depends on the number of supported bit rates
		RtsEnable	Enable RTS option	0 – do not use RTS control signal 1 – use RTS control signal
		DtrEnable	Enable DTR option	0 – do not use DTR control signal 1 – use DTR control signal
MSMQ_settings	A group of elements. MSMQ settings if InputPortType is MSMQ	ReconnectTimeout	The time after which an attempt is made to restore connection, if messages are not received	Up to 60 seconds
		NoTimeFilter	Enables or disables messages filtering by time	true - messages are filtered by time false - messages are not filtered by time
		DeleteMessages	Enables or disables message deletion after they are read	true - messages are deleted false - messages are not deleted

Element name	Element description	Element attribute	Attribute description	Value range
		Queue.Path	Path to the queue	-
		Queue .Terminal	Number of the terminal that is inserted for the specified queue	-
JMS_settings	A group of elements. Sets JMS settings if InputPortType is JMS	Url	Url-address	-
		Login	Login	-
		Password	Password	-
TcpClients_Settings	A group of elements. Specifies TCPCLIENT settings if InputPortType is TCPCLIENT	IpAddress	Connection address	-
		Port	Connection port	-
		Message	Command to send (optional)	-
		Interval	Command sending interval ("Message") in ms (optional)	-
		IdTerminal	Terminal id for the node, to be specified in the forwards section (optional)	-
forwards	A group of elements. Sets the correspondence between the routing id and POS-server IP-address/port	ip	POS-server IP-address	Depends on the POS-server network settings
		port	POS-server port	Depends on the POS-terminal object settings
		id	Routing id	Depends on the routing id value in the data package. If the id=”*”, then data from all POS-terminals is redirected to the POS-server

Element name	Element description	Element attribute	Attribute description	Value range
PluginSettings	A group of elements. Specifies Liko, SecurOS and LogisticsSystemPlugin plugin settings if InputPortType is PLUGIN For details, see Configuring data receiving from plug-ins	-	-	-

Note

If the events come in from several objects, the correspondence between the routing id and POS-server IP-address/port should be set for each of these objects. See the example below.

```
<forwards>
  <forward ip="127.0.0.1" port="2555" id="127.0.0.1" />
  <forward ip="127.0.0.1" port="2556" id="127.0.0.2" />
  <forward ip="127.0.0.1" port="2557" id="127.0.0.3" />
</forwards>
```

Important!

If the routing id of a package has no match in the utility configuration file, and the id="*" is not set, the package is deleted.

Configuring data receiving from plug-ins

На странице:

- General plugin setup
- Configuring Liko, SecurOS, LogisticsSystem Plugin, JAMMPlugin and OFDPlatform plug-ins

General plugin setup

Some plug-ins have their own settings, the files of which are located in the *<POS PSIM* installation directory>\Modules\Pos\Forwarders\Protocols\Settings\ folder. Depending on the plugin used (**ProtocolName** parameter in the **mixforward.exe.xml** configuration file), you must also configure them. For details, refer to the respective settings files.

Configuring Liko, SecurOS, LogisticsSystemPlugin, JAMMPlugin and **OFDPlatform** plug-ins

The data receiving from the plug-in is configured in the PluginSettings elements group of the **mixforward.exe.xml** configuration file.

A description of the elements of the PluginSettings group is given in the table.

Element name	**Element description**	**Element attribute**	**Attribute description**
OFDSettings	Sets the OFDPlatform plugin settings if InputPortType = PLUGIN and ProtocolName = OFDPlatform	BaseURL	API base address
		Token	Token
		RequestInterval	Event information update interval, ms
JAMMPluginSettings	Sets the JAMMPlugin plugin settings if InputPortType = PLUGIN and ProtocolName = JAMMPlugin	BaseURL	API base address
		Token	Token
		RequestInterval	Event information update interval, ms
		UseTimeInReciept	Use the receipt time. If UseTimeInReciept=true, then use the receipt time. If UseTimeInReciept=false, then use the time when the MixForward utility received the check
LogisticsSystemSettings	Sets the LogisticsSystemPlugin plugin settings if InputPortType = PLUGIN and ProtocolName = LogisticsSystemPlugin	FileUrl	Path to the folder containing the parsing files in CSV format. After parsing, these files are removed from the folder specified in <FileUrl>
		TimeStart	The start time of the parsing process in the following format — hours:minutes, for example, 23:30

Element name	Element description	Element attribute	Attribute description
LikoSettings	Sets the Liko plugin settings if InputPortType = PLUGIN and ProtocolName = Liko	BaseURL	API base address
		Login	Account login
		Password	Account password
		RequestInterval	Event information update interval, ms
SecurOSSettings	Sets SecurOS plugin settings if InputPortType = PLUGIN and ProtocolName = SecurOS **Note.** If the plugin creates its own detailed log (PrivateLog=true), then the SecurOS plugin log will be located in the <*POS PSIM* installation directory>\Modules\Pos\Forwarders\MixForward\Protocols\SecurOSLogs\ folder.	BaseApiURL	API base address
		Login	Account login
		Password	Account password
		CallbackUrl	HTTP server address for receiving events from SecurOS
		ObjectInfo	Information about the object for which it is necessary to receive events. Type - object type id - object id in the system idTerminal - terminal id to which the information about the POS events will be sent
		SubscribeEvent	Required event name

Configuring getting data from third-party remote Server

Specify the following parameters in the **mixforward.exe.xml** configuration file in order to get data from third-party software that is not client to *POS PSIM* by connection type:

- Connection type;

```
<InputPortType>TCPCLIENT</InputPortType>
```

- Plugin;

```
<ProtocolName>SimplePlugin</ProtocolName>
```

- Third-party Server address;

```
<TcpClients_Settings>
  <Address IpAdress="127.0.0.1" Port="23"/>
  <Address IpAdress="127.0.0.1" Port="24"/>
</TcpClients_Settings>
```

- *POS PSIM* Server address.

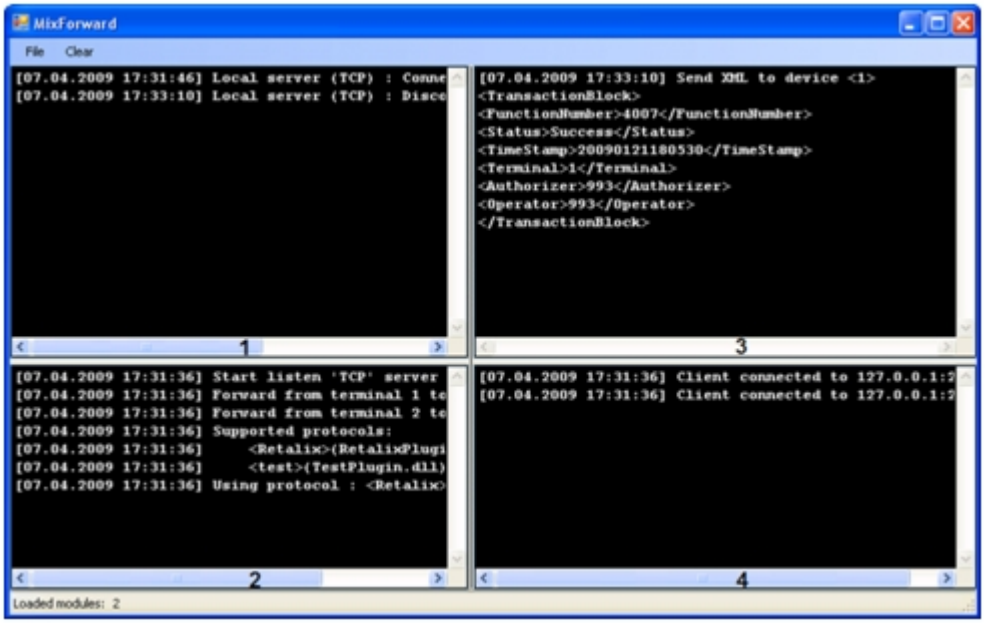
```
<forwards>
    <forward ip="127.0.0.1" port="2555" id="127.0.0.1:23" />
    <forward ip="127.0.0.1" port="2556" id="127.0.0.1:24" />
  </forwards>
```

7.6.3 Using the MixForward utility

Automatic operation of the MixForward utility

When the **MixForward.exe** file runs, the **MixForward** icon appears in the system tray. In case of correct configuration settings in the **mixforward.exe.xml** file, the data packages sent to the local port from POS-terminals, are routed automatically to POS-servers.

To view the data reception and redirection information, double-click the **MixForward** icon in the system tray.



The table describes the elements in the **MixForward** window.

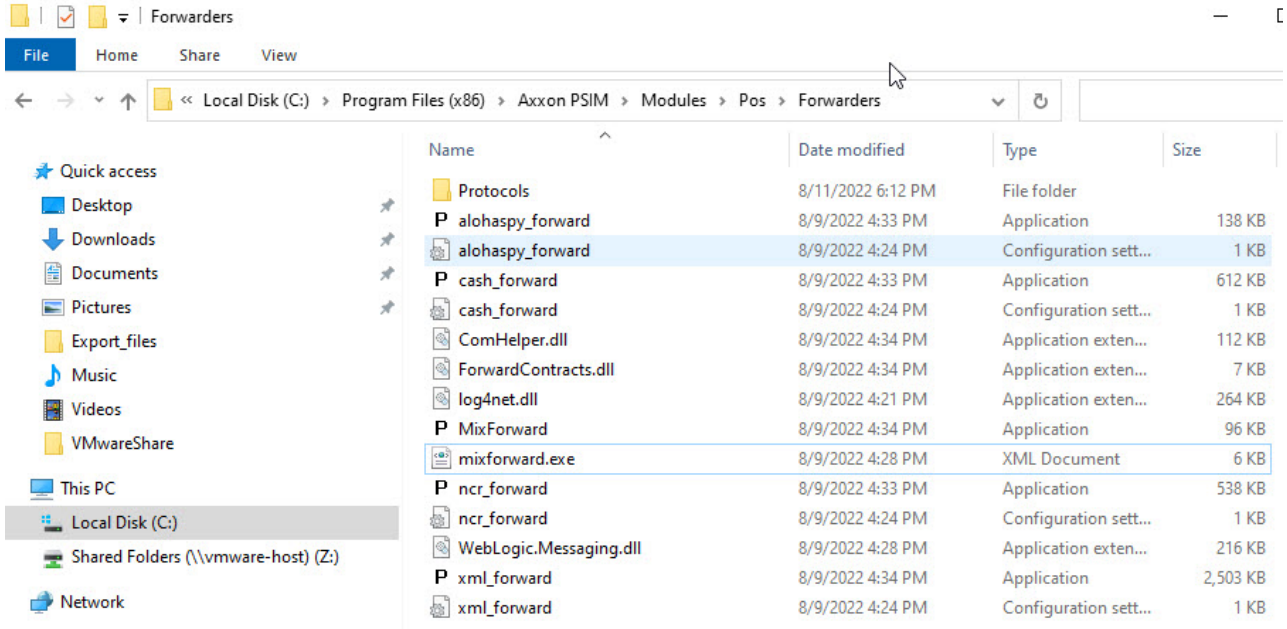
№	Element description
1	Information about the connection to the Pos-terminal through a local port specified in the **mixforward.exe.xml** file

№	Element description
2	Routing settings specified in the **mixforward.exe.xml** file, the list of supported protocols (plug-ins) and the name of the currently used protocol
3	Data packages received from the POS-terminals
4	Information about the connection to the POS-servers specified in the **mixforward.exe.xml** file. Information about an error if the data package can not be redirected

The **Clear** menu item empties tiles 1, 3 and 4 in the window.

Logging the routing process

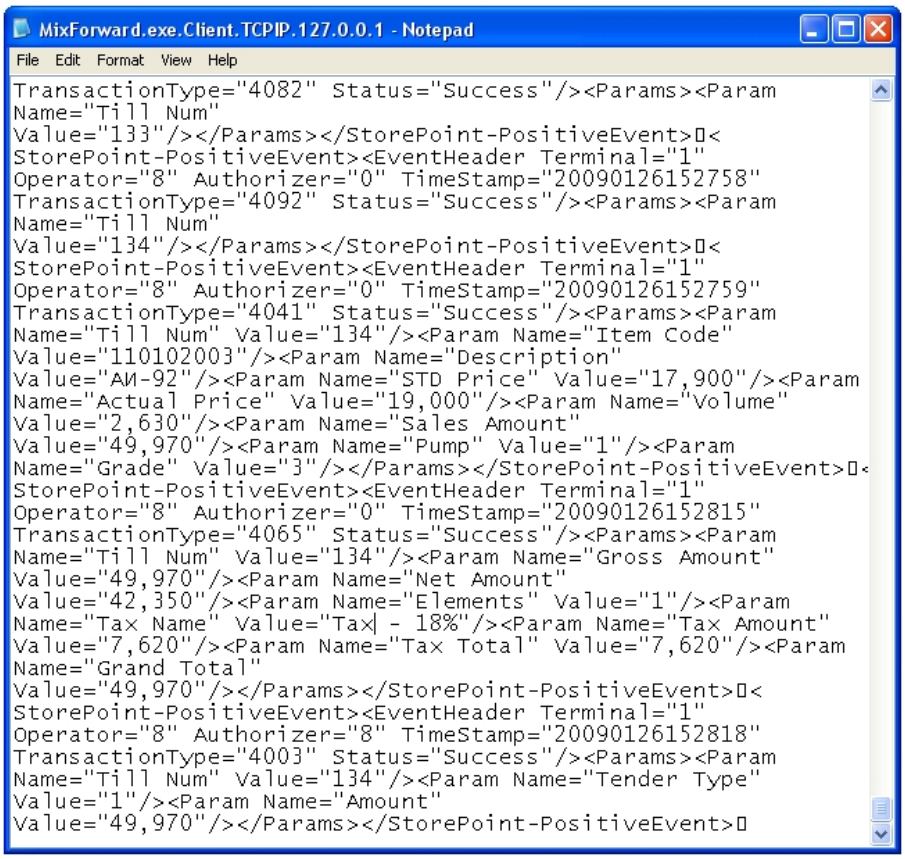
The routing of the data packages to POS-servers is logged to file.



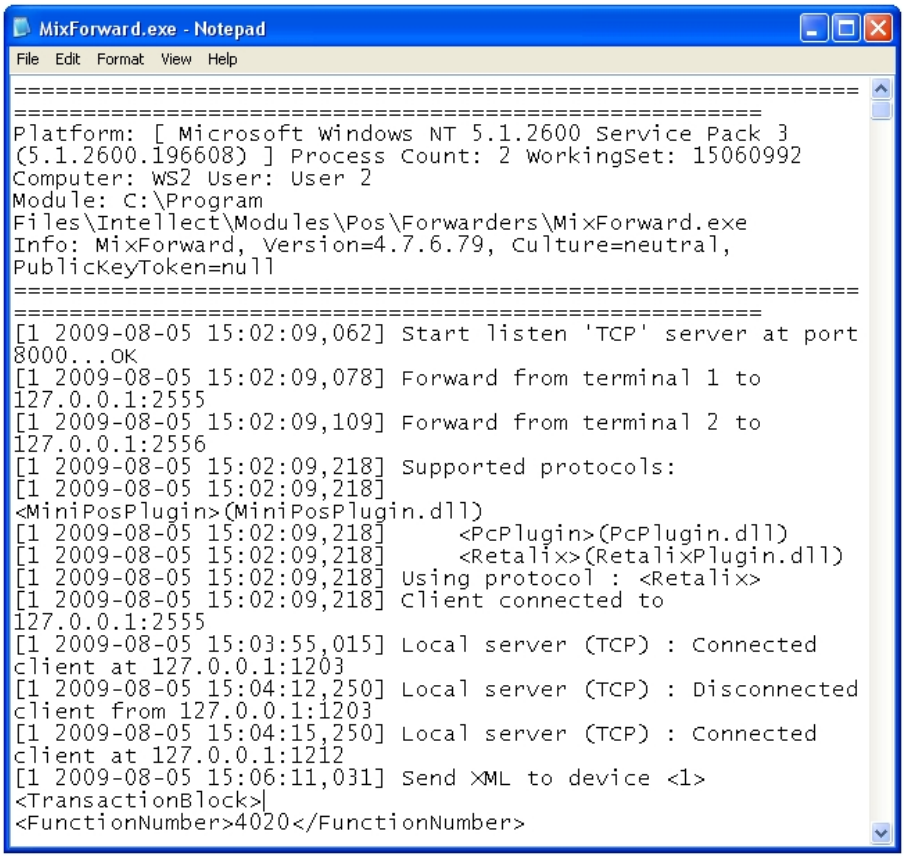
The table describes the **MixForward** log files.

Log file name	Main logged data	Additional log information
MixForward.exe.Client.<Terminal>.LOG, where <Terminal> denotes the connection to the POS-terminal	Unprocessed data packages from POS-terminals	-
MixForward.exe.LOG	Data packages processed by the plug-in	Information about the routing settings, supported protocol list, current protocol name

Figures below show the examples of log-files.



Example log file: MixForward.exe.Client.<Terminal>.LOG



Example log file: MixForward.exe.LOG

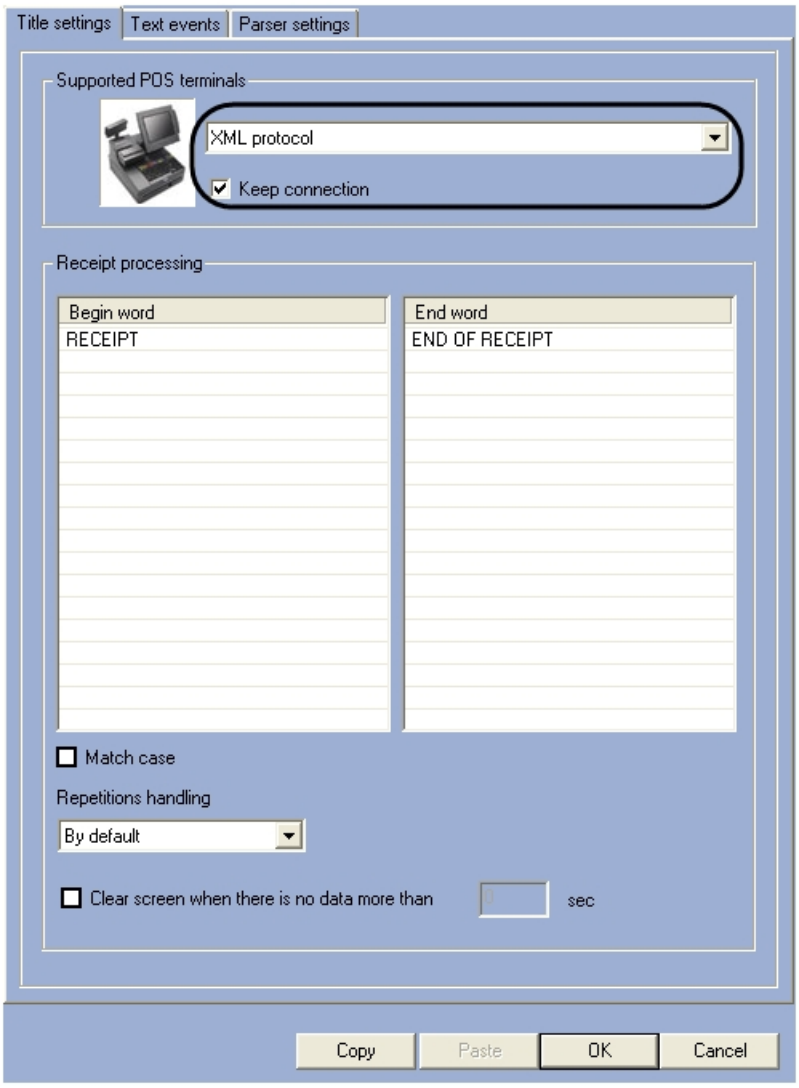
When the log file size reaches the maximum specified in the **mixforward.exe.xml** file (see the Setting up the MixForward utility section), it is automatically renamed. Then new log file is created to continue logging.

Re-connecting POS-server to the MixForward utility

In case the POS-server abnormally disconnects from the MixForward utility, is can be re-connected.

To restore the correct connection, make sure the POS-terminal object is set up in the following way (see the Selecting the type of POS terminal and setting the connection parameters section):

1. XML-data receipt via TCP protocol is expected;
2. The **Keep connection** checkbox is set checked.



If the **Keep connection** option is enabled, the POS-server registers the connection of the utility and determines the time interval since the last data transfer. If the data has not been received for more than 30 seconds, the POS-server breaks the connection and re-establishes it again.

> **Note**
>
> If no data has been received from POS-terminals, the utility sends the control packages containing the FunctionNumber 77777 element to the POS-server at 5 second intervals.

> **Important!**
>
> If there is connection loss or errors when sending data from MixForward utility in *POS PSIM*, then the **Keep connection** checkbox is to be set unchecked.

To close the MixForward utility and stop the data package routing process, select **Close** in the **File** menu.

> **Note**

Clicking the  button in the upper right corner of the window closes the window, but does not stop the routing process.

7.7 Appendix 7. How to integrate a new POS terminal into POS PSIM

On the page:

- Collecting POS terminal logs using POS PSIM
- Collecting POS terminal logs using a special utility

If a new POS terminal is to be integrated into *POS PSIM*, then provide AxxonSoft with essential information on this POS terminal in one of the following ways:

1. Using *POS PSIM*: see Collecting POS terminal logs using POS PSIM.
2. Using a special utility (without *POS PSIM* installation): see Collecting POS terminal logs using a special utility.

Before start, check if a POS terminal supports data transmission over Ethernet or via the COM port. This information can be found on the official website of POS terminal manufacturer or in the documentation.

7.7.1 Collecting POS terminal logs using POS PSIM

Follow these steps to gather required information about POS terminal using *POS PSIM*:

1. If the POS terminal supports data transmission over Ethernet or via the COM port, then install *Axxon PSIM* on the computer and then install *POS PSIM* (if it is not already installed).
2. Connect the POS terminal to this computer.
3. Run *POS PSIM.*
4. Create a **POS terminal** object and set up the connection between POS terminal and *POS PSIM* – see Selecting the type of POS terminal and setting the connection parameters.

   Note.

   The type of POS terminal is to be **By default**.
5. Shut down *POS PSIM*.
6. Enable logging – see Enabling and disabling the logging function.
7. Run *POS PSIM*.
8. Start using the POS terminal, i.e. issuing receipts. It is highly recommended to do all the operations including Cancel, Return, etc.

After doing all the operations on the POS terminal, send the log file with copies of receipts to AxxonSoft.

Note.

Location of log file can be found when enabling logging (see step 7 above as well as Viewing log files section).

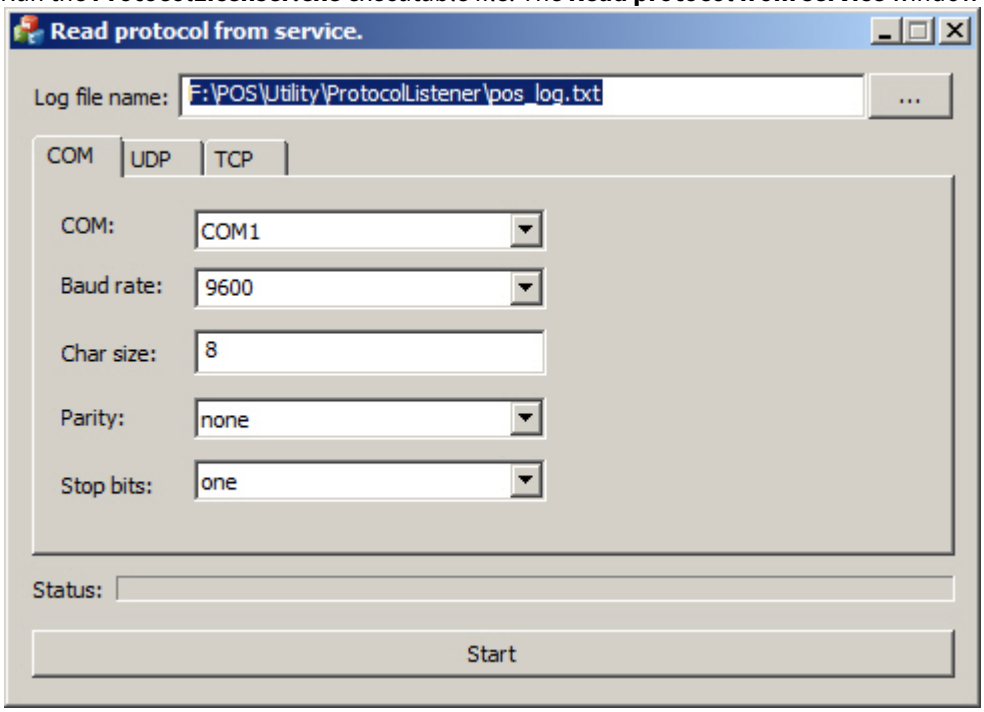
Important!

If the log file of POS terminal is to be processed in software, then provide AxxonSoft with protocol description. POS terminal manufacturer can give this information.

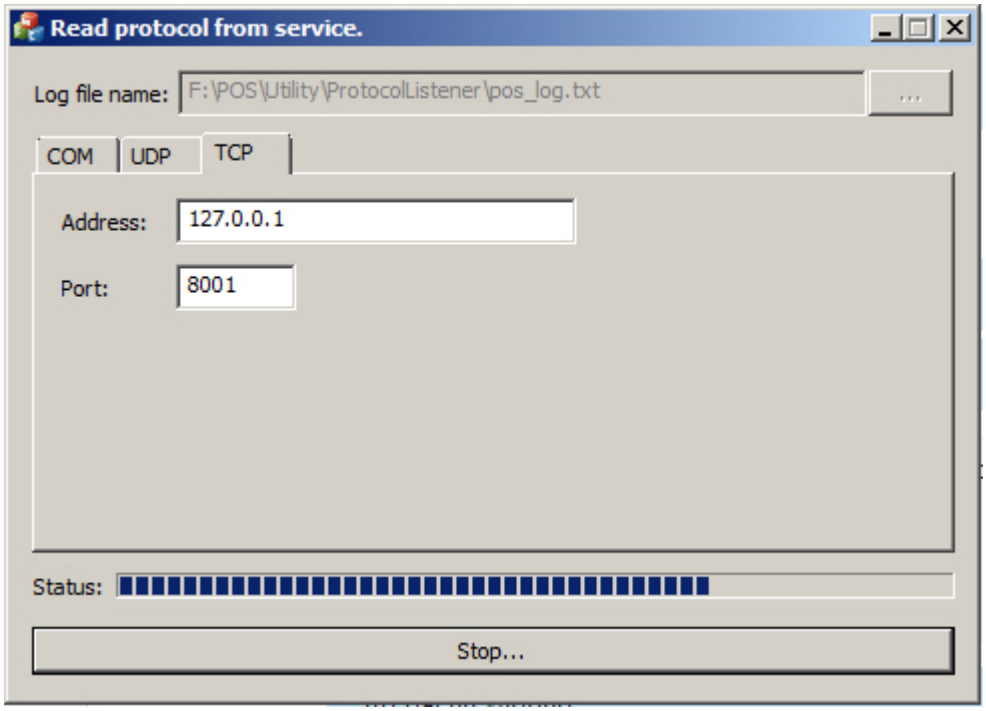
7.7.2 Collecting POS terminal logs using a special utility

Follow these steps to gather required information about POS terminal using a special utility:

1. If the POS terminal supports data transmission over Ethernet or via the COM port, download the POS Terminal Data Collection Utility at the AxxonSoft web-site.
2. Extract downloaded archive into any folder.
3. Connect the POS terminal to the computer.
4. Run the **ProtocolLicenser.exe** executable file. The **Read protocol from service** window opens.



5. In the **Log file name** field specify a full path to the folder where the file with gathered info is to be saved. By default, the file is stored in the folder to which the archive with the utility is unpacked.
6. If the POS terminal is connected to the computer via COM-port, specify connection parameters in the **COM** tab.
7. If the POS terminal is connected to the computer via Ethernet, specify connection parameters for TCP or UDP protocol in the corresponding tab.
8. Click **Start** to run log collection.
9. Start using the POS terminal, i.e. issuing receipts. It is highly recommended to do all the operations including Cancel, Return, etc.
   Process of gathering info is displayed via the **Status** progress bar.



To finish log collection click **Stop**.

After doing all the operations on the POS terminal, send the log file with copies of receipts to AxxonSoft.

> **Important!**
>
> If the log file of POS terminal is to be processed in software, then provide AxxonSoft with protocol description. POS terminal manufacturer can give this information.

7.8 Appendix 8. Adding information to the receipt body using script

It is possible to add information on the *Axxon PSIM* embedded programming language or on the JScript language to the receipt body using script.

> **Note.**
>
> More information about operation with scripts see in the *Axxon PSIM software package. Programmer's Guide (JScript)* document. Current version of this document is available in the AxxonSoft documentation repository.

To add information to the receipt body use the ADD_TAG reaction of the POS object. Information which is to be added is sending in the tag<> parameter of this reaction. At executing of this command the specified string is written to the receipt before the receipt end. If command is executed during pause between receipts, the specified string will be written to the next receipt.

Example of command to add information to the receipt body using macro 1 on the JScript language is follows:

```
if (Event.SourceType=="MACRO" && Event.SourceId=="1" && Event.Action=="RUN"") {
    DoReactStr("POS","1","ADD_TAG","tag<info to be added>");
}
```