User Guide
Version 3.2

CountBOX smart device
Visitors counting video system

This guide familiarizes the user with the technical characteristics and functionality of the CountBOX smart device visitors counting video system, Version 3.2 (hereinafter CountBOX STD-1).
The documentation includes connection, authentication, setup and operating manuals CountBOX STD-1, a web interface description of the device, and a chapter dedicated to creating queries with the use of WEB API for programmers and system administrators.

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Contents

Getting started

The CountBOX STD-1 is designed for counting visitors in various public places, such as banks, offices or shops — any place where attendance analysis is required.
This device captures and processes video data and records results in an embedded database (hereinafter DB). It is also possible to see CountBOX STD-1 results in the form of a diagram and report.

1. Fundamental Principles

The CountBOX STD-1 operating principle consists of counting visitors passing through the coverage zone of a video camera. The calculation is carried out in two directions: incoming and outgoing. The general number of incoming and outgoing visitors is recorded in a DB. The statistics can then be used in any number of ways according to the user's demands.

CountBOX STD-1 performs the following functions:

1. Collects statistics
2. Saves statistics in DB
3. Displays statistics in CountBOX STD-1 web interface in the form of a diagram
4. Exports statistics to reports in XML/CSV format.

CountBOX STD-1 combines the following functions:

1. Receiving video images (fig. 1.1)
2. Accessing web interface (fig. 1.2)
3. Video analysis (fig. 1.3)
4. Device status indication (fig. 1.4)
5. DB storage (fig. 1.5)
6. Automatic restart in case of failure/hang-up (fig. 1.6)
7. Factory reset (fig. 1.7).

Figure 1: CountBOX STD-1 functions

2. Technical Requirements and Characteristics

In order to provide the CountBOX STD-1 with good working capacity, there are certain requirements for throughput, device voltage and the user's computer software. See table 1 for the description of technical requirements.

Table 1: Technical requirements

Requirement type	Characteristic type	Property value
Hardware requirements	Throughput	At least 2 Mbit/s
	Connection method	UTP–based Ethernet network
	Voltage	PoE 802.3af, class 0
	Minimum screen resolution	1024x768
Software requirements	Compatible browsers	Mozilla Firefox —28.0 Google Chrome — 33.0.1750.154m Safari — 6.0.5 (8536.30.1) Internet Explorer — 8.0.7600.16385; 9.0.8112.16421; 10.0.9200.16844
	Browser plugins	JavaScript, Cookies
	Device ports available to the browser	for http protocol — 80; 1024 — 32668 for https protocol — 443
	Time synchronization with NTP server	

3. Device Connection and Assembly

Assembly of the CountBOX STD-1 should be carried out in accordance with the following requirements:
1. The device must be installed over a doorway with a height of 2.7-5 meters (with lenses adjustment up to 15 meters).
2. The device's optical axis **must be** oriented perpendicular to the floor.
3. Device coverage zone **must not be** narrower than a hallway (corridor), where counting of visitors will take place.

Device connection to the local network is carried out with the help of a PoE–injector[1]. All the device power and local network requirements are listed in chapter 2, "Technical Requirements and Characteristics". The connection scheme of CountBOX STD-1 to the local network is shown in fig. 2.

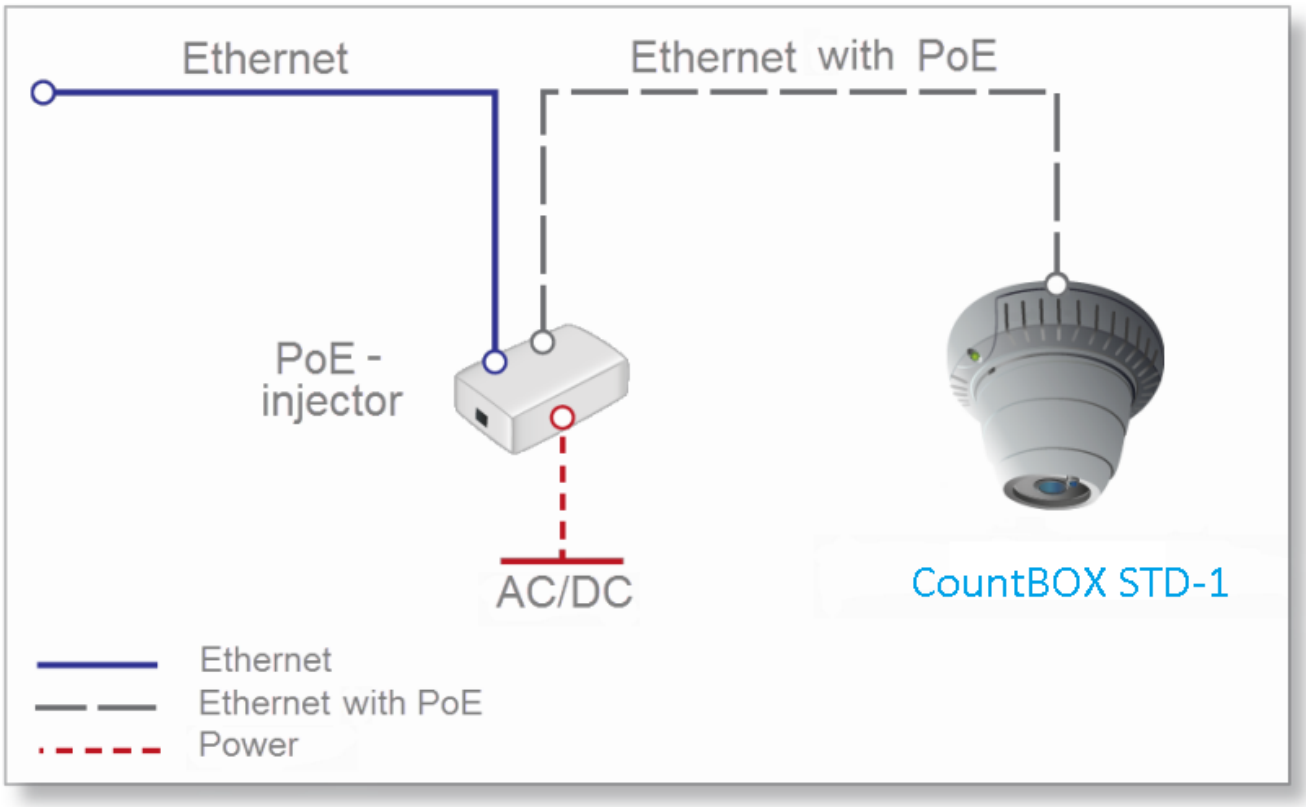

Figure 2: Connection scheme of CountBOX STD-1 to the local network

After assembly and connection, in accordance with the scheme, are finished (see fig. 2), the CountBOX STD-1 is ready for setup.

[1] Power over Ethernet (PoE) — a technology to power the end device through regular Ethernet twisted pair wires combined with network information.

4. CountBOX STD-1 Startup and Shutdown Process

Authorization in CountBOX smart device web interface is required for CountBOX STD-1 startup. Follow the steps below to authorize:

1. Enter the IP address in browser's address bar [1] (http://192.168.10.10 by default). If the IP address is unknown or has been lost, you can define it by searching CountBOX STD-1 in the network[2].
2. Enter user name/password[3] in the authorization window (fig. 3) of CountBOX STD-1 web interface (fig. 3.1):

a) admin/admin for the administrator
b) user/user for the user

The " " button is displayed during entering the password. This button is used to view the password. It is necessary to press and hold the button the required time to view the password.

3. Click "Login" (fig. 3.2).

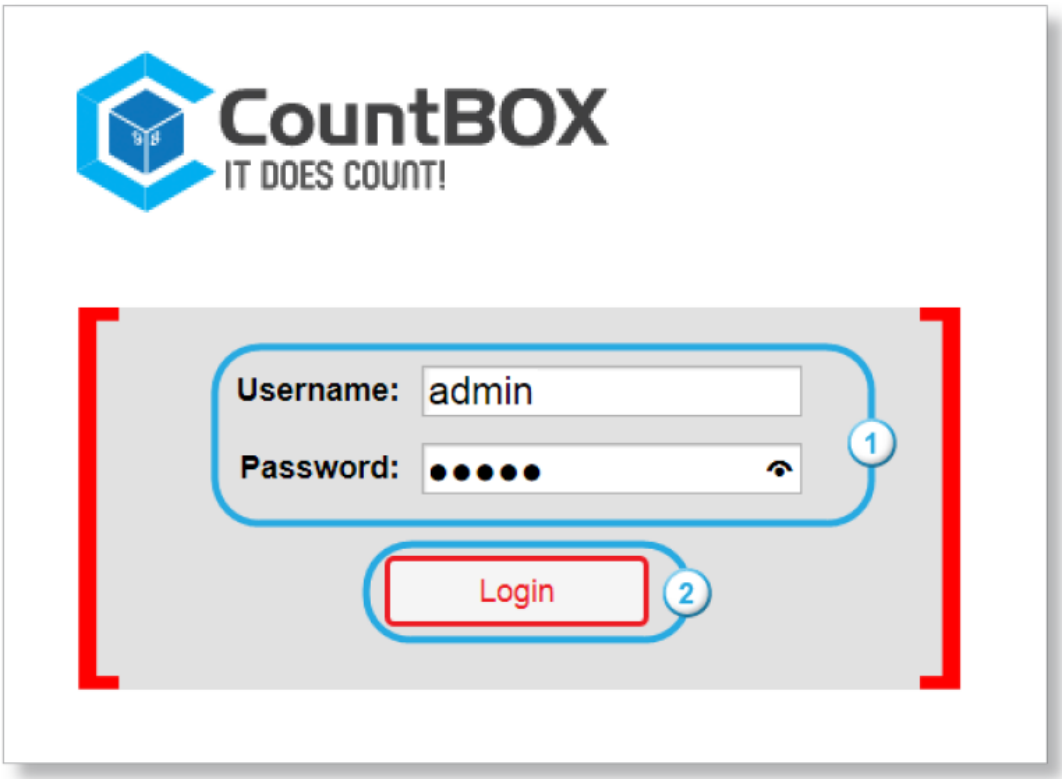

Figure 3: Authorization window of CountBOX STD-1 web interface

As a result, the CountBOX STD-1 web interface is displayed (fig. 4).

[1]Information about compatibility of CountBOX STD-1 software with browsers is provided in chapter 2, "Technical Requirements and Characteristics".
[2] Information about CountBOX STD-1 IP address definition is provided in chapter 5.2, "IP address identification for CountBOX STD-1 ".
[3]Information about account settings is provided in chapter 5.3, "Editing CountBOX STD-1 User Accounts".

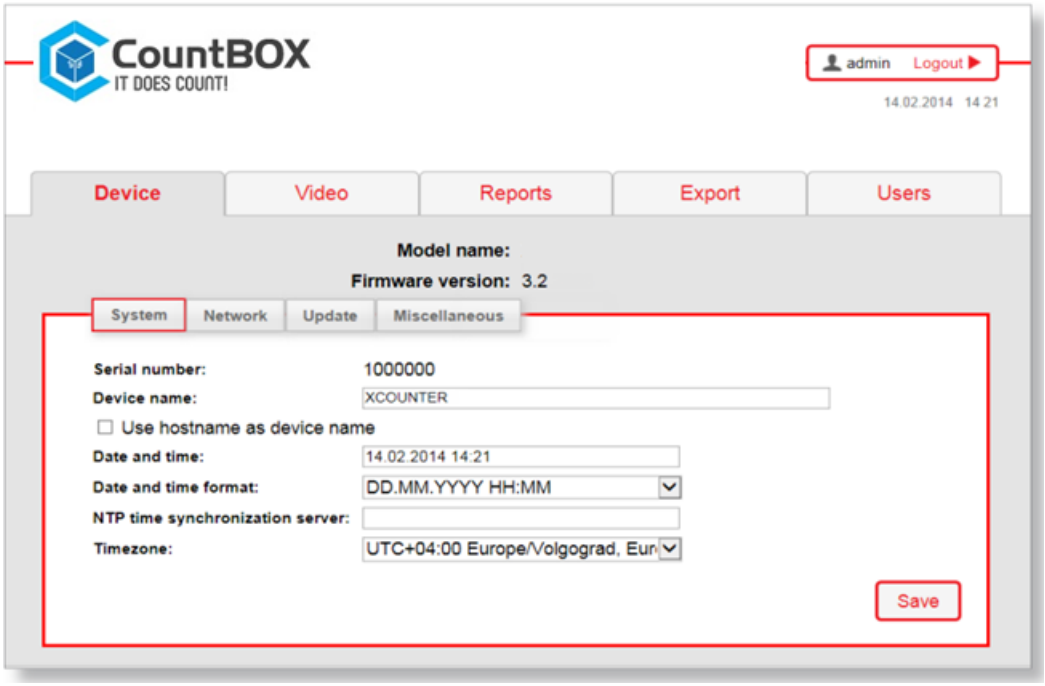

Figure 4: CountBOX STD-1 web interface

For CountBOX STD-1 shutdown, click "Logout" in the upper right corner

5. CountBOX STD-1 Installation

CountBOX STD-1 installation is performed by device and algorithm setup. Device setup includes the following steps:
1. System settings setup
2. Network settings setup
3. Users' accounts editing.

Algorithm setup includes the following steps:
1. Intersection line setup
2. Object size setup
3. Algorithm checkup.

5.1 Device setup

CountBOX STD-1 setup is carried in the "Device" tab (fig. 5.1). This tab also contains information about the device model (fig. 5.2) and firmware version (fig. 5.2).

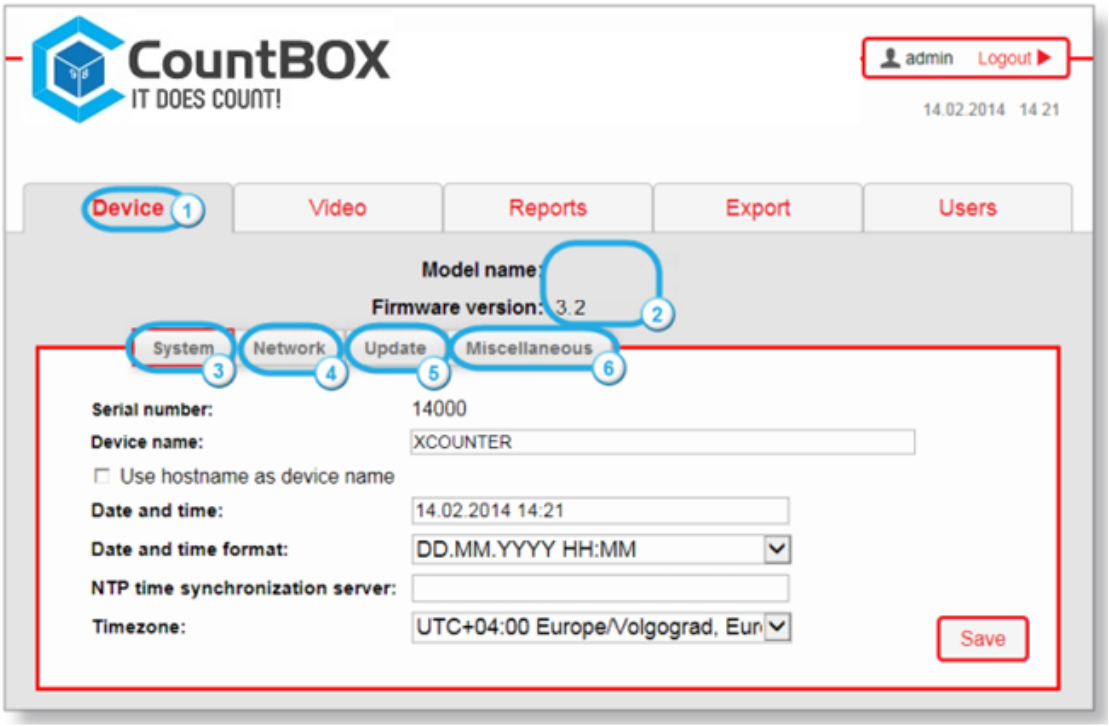

Figure 5: "Device" tab

Description of the "Device" tab is given in table 2.

Table 2: Description of the "Device» tab

Number in fig. 5	Tab name	Description
3	System	Used for setting the date, time and CountBOX STD-1 name
4	Network	Used for network connection setup and obtaining CountBOX STD-1 domain name
5	Update	Used for CountBOX STD-1 firmware update
6	Miscellaneous	Used for getting log-files, DB cleanup and CountBOX STD-1 reload

5.1.1 "System" tab

The "System" tab (fig. 6.1) is used for setting the date, time and device name. It also contains information about the CountBOX STD-1 serial number.

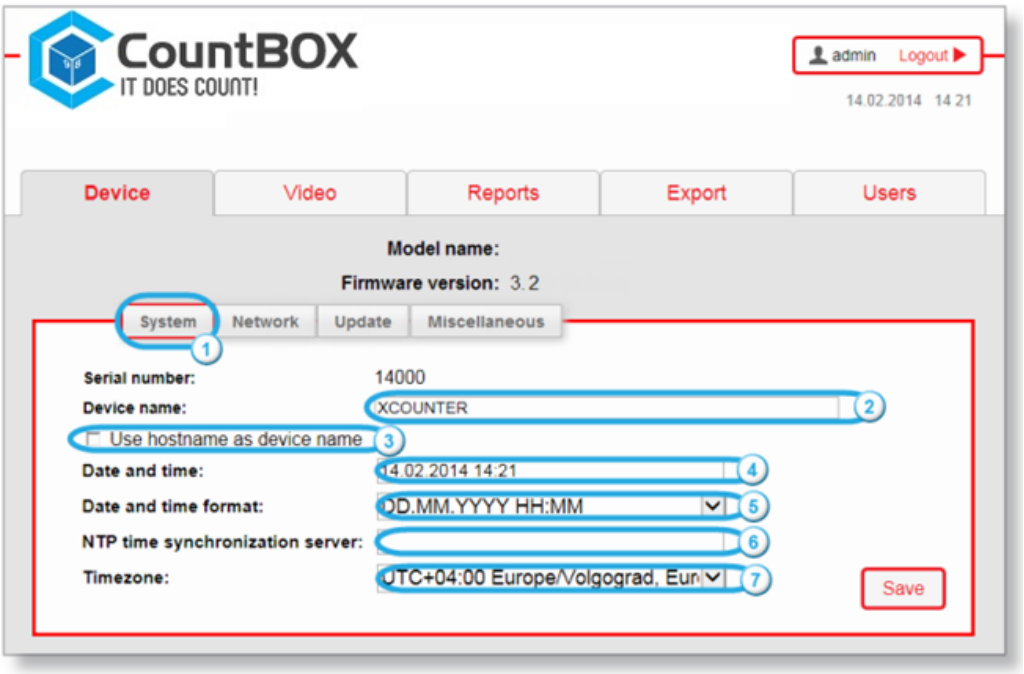

Figure 6: "System" tab

Description of the "System" tab is given in table 3.

Table 3: Description of the "System" tab

Number in fig. 6	Tab name	Description
2	Device name	Used for assigning the device name, which is further used in web interface and statistic reports. The device name can contain a maximum of 64 symbols (letters of any alphabet, figures, symbols, e.g., ~!@#$%^&*()_+`'":;|/<>[]{}-?, and spaces)
3	Use hostname as device name	Used to change a device name for a hostname. Hostname has the following view by default: xcounter-[device serial number]. Hostname can be changed in the "Network" tab. After the checkbox, the device name setup will not be available for editing. (fig. 7.1)
4	Date and time	Used to show the exact time on CountBOX STD-1. The field is filled in after choosing the time zone
5	Date and time format	Used to select date and time format in CountBOX STD-1 web interface[1]
6	NTP time synchronization server	Is used for getting exact time data from NTP server. If synchronization is not required, there is no need in filling in the field. The use of Cyrillic alphabet is not available
7	Timezone	Is used for timezone setup in CountBOX STD-1 web interface. Timezone can be chosen from the range from UTC-10 to UTC+12

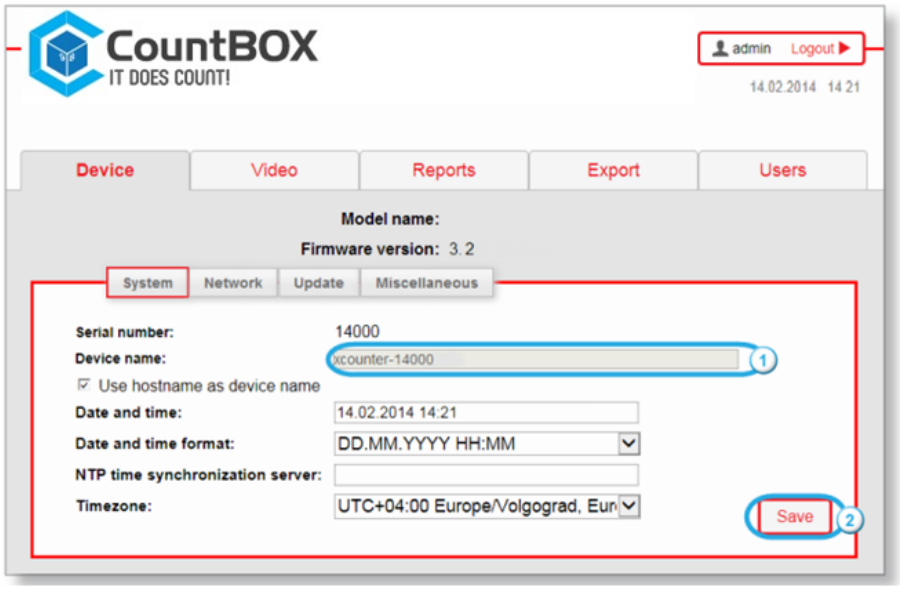

Figure 7: using hostname as device name

After setting the required settings click **"Save"** in order to save them (see fig. 7.2).
The message about data saving result will then appear after 1–minute time out.

5.1.2 "Network" tab

The "Network" tab (fig. 8.1) is used for network connection setup and setting the domain name. This tab also contains information about CountBOX STD-1 MAC address (fig. 8.2).

[1] Date and time format is YYYY-MM-DD HH: MM: SS.

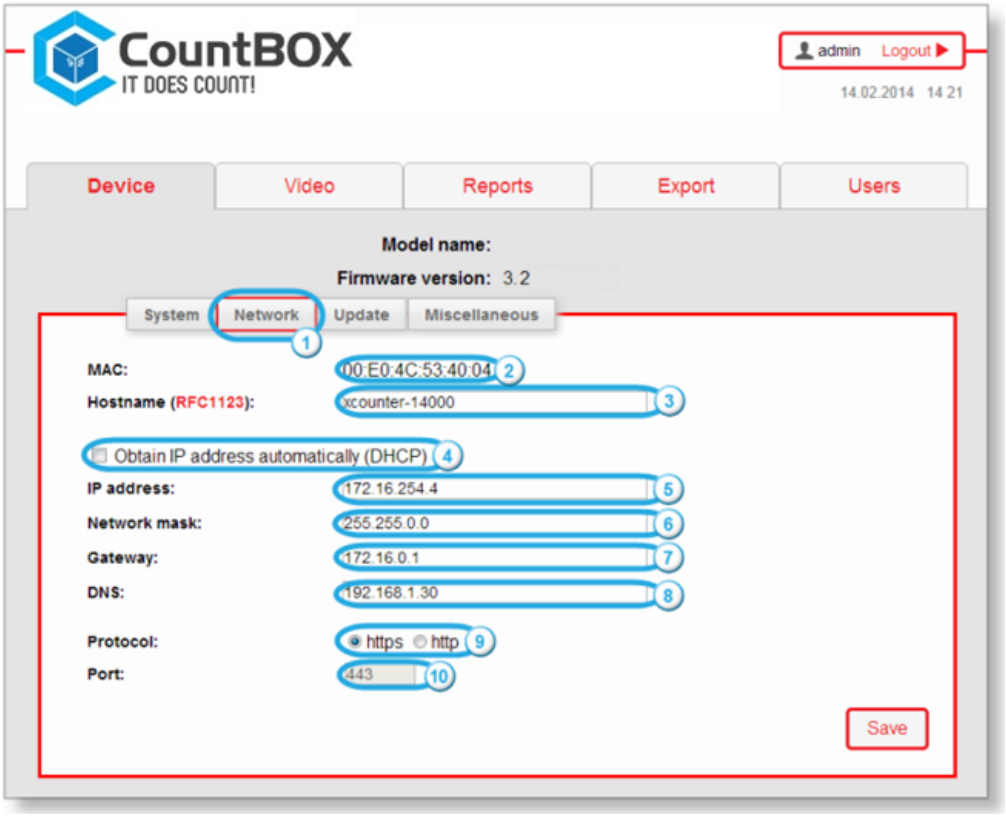

Figure 8: "Network" tab

Description of the "Network" tab is given in table 4.

Table 4: Description of the "Network" tab

Number in fig. 8	Tab name	Description
3	Hostname	Is used for login setup in CounBOX STD-1 interface by a domain name. Domain naming rules are described in RFC1123[1] standard. The name by default is CountBOX STD-1–[device serial name]. Setup is used only after the checkbox is preset to "Obtain IP address automatically (DHCP)"
4	Obtain IP address automatically (DHCP)	Is used for activating automatic reception of the network settings from DHCP server
5	IP address	Is used for CountBOX STD-1 IP address. After the checkbox preset to "Obtain IP address automatically (DHCP)" field "IP address" will not be available for editing (fig. 9)
6	Network mask	is used to allow access to CountBOX STD-1 from this or any other network. After the checkbox preset to "Obtain IP address automatically (DHCP)" the field "Network mask" will be automatically filled in and will become unavailable for editing (fig. 9.1). If the checkbox is set in front of the settings field "Manual edit", it is possible to edit it manually (fig. 9.2)
7	Gateway	Is used to allow gateway to CountBOX STD-1 from another subnet. After the checkbox preset to "Obtain IP address automatically (DHCP)" the field "Gateway" will be automatically filled in and will become unavailable for editing (fig. 9.1). If the checkbox is set in front of the "Manual edit" settings field, it is possible to edit it manually (fig. 9.2)

8	DNS	Is used in case of NTP server specifying by domain name.After the checkbox preset to "Obtain IP addressautomatically (DHCP)", the field "DNS" will beautomatically filled in and will become unavailable forediting (fig. 9.1). If the checkbox is set in front of the "Manual edit" settings field, it is possible to edit it manually (fig. 9.2)
9	Protocol	Is used to choose the transmission data protocol by activating the corresponding radio button
10	Port	Is used for indicating the port depending on a chosen transmission data protocol. http protocol corresponds to port 80, https protocol corresponds to port 443 by default. Values are used in the range from 1024 to 32668 when editing a port number

To apply current settings click "Save" (fig. 9.3).

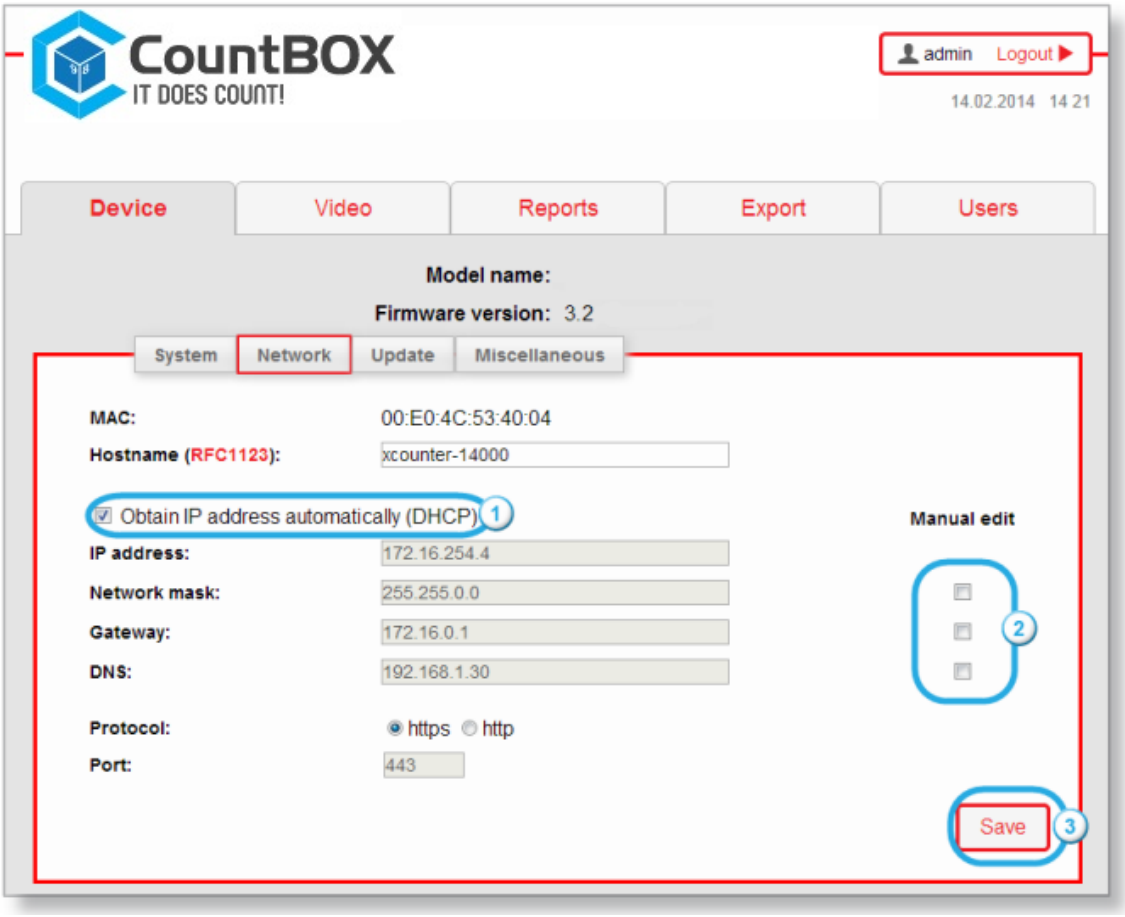

Figure 9: setup of getting network settings from DHCP server

For logging in to CountBOX STD-1 web interface not only with IP address, but also with the domain name one needs:
1. Enter the domain name (if it is required) in the field "Hostname (RFC1123)" or use the domain name by default (fig. 10.1)

[1] Standard RFC1123 will open after clicking RFC1123 in "Hostname" field.

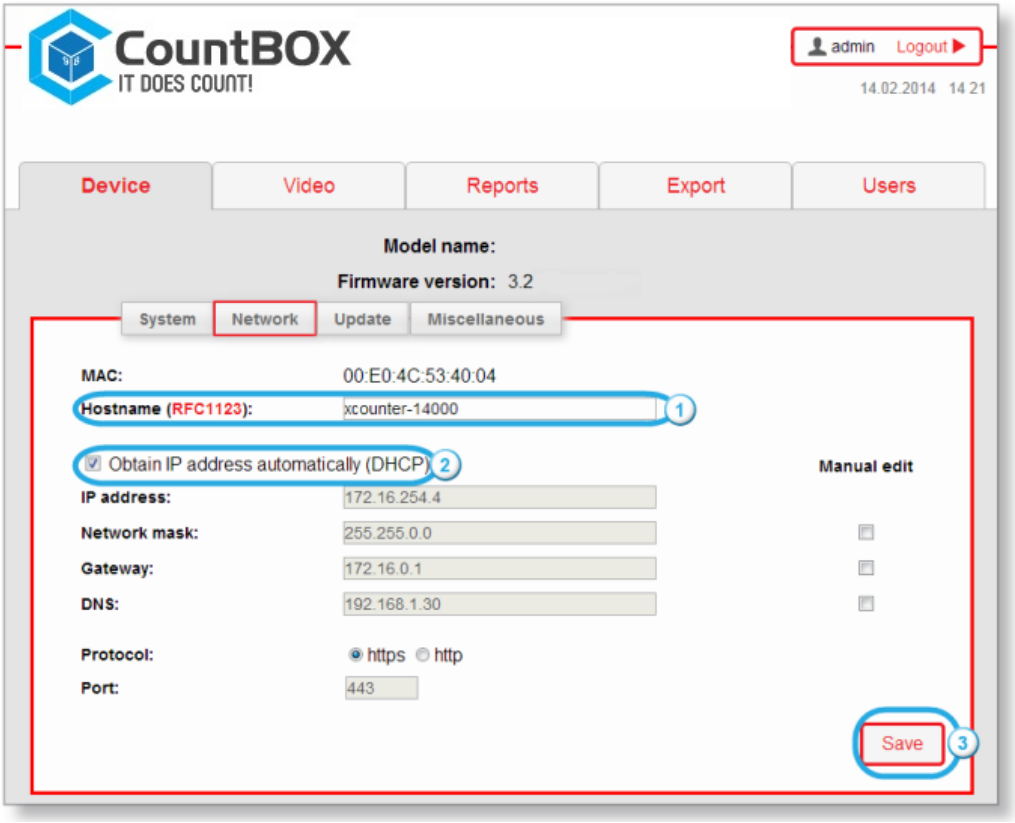

Figure 10: setup of logging in to the web–interface using the domain name

2. Check the checkbox "Obtain IP address automatically (DHCP)" (see fig. 10.2)
3. Click "Save" (see fig. 10.3).

Having done that one can open CountBOX smart device web interface by entering domain name to the browser address bar (fig. 11).

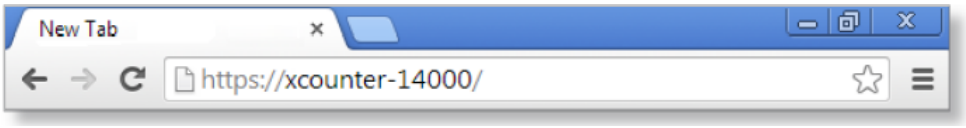

Figure 11: entering the domain name to the address bar

5.1.3 "Miscellaneous" tab

The "Miscellaneous" tab (fig. 12.1) is designed for downloading log files, clearing the database and rebooting CountBOX smart device.

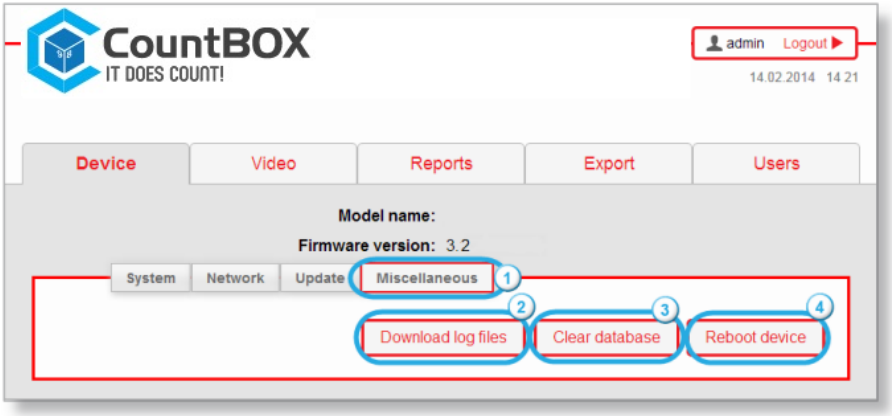

Figure 12 "Miscellaneous" tab

Description of the "Miscellaneous" tab is given in table 6.

Table 6: Description of the "Miscellaneous" tab

Number in fig. 12	Interface elements	Description
2	"Download log files" button	Is used for getting an archive with log-files. In case of the device malfunction the file logs.tar.gz, containing the data journal, is to be sent for diagnostics to the technical support service
3	"Clear database" button	Is used for clearing database (a detailed description of cleaning database procedure is given below)
4	"Reboot device" button	Is used to reboot CountBOX smart device when needed

Database is cleared in following cases:
1. When the user decides to. For example, if the device was installed to a new place and old statistics are no longer needed
2. When the quantity of database events is approaching the maximum. After opening CountBOX STD-1 web interface the user will see the following message about an error "**Number of events in the database is reaching its maximum. It is recommended to clear the database"**
3. When the quantity of database events exceeds the maximum. After opening CountBOX STD-1 web interface the user will see the following message about an error **"Number of events in the database has exceeded its maximum. Stable operation is not guaranteed. It is recommended to clear the database as soon as possible"**[1].

There are three ways to clear a database. The choice of a particular way to clear the database depends on the time period of data that must be removed.

Way 1. The "Remove all events" tab (fig. 13.1) is used for removing statistics from the database for the whole device working period. To clear the database this way you need to click "Clear database" (fig. 13.4).

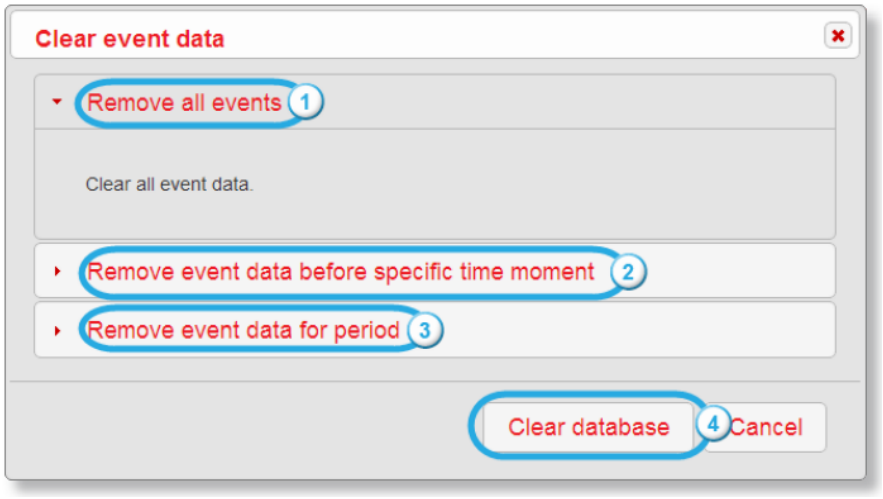

Figure 13: "Clear event data" box

[1] Error messages will be displayed until the database is cleared.

Way 2. The "Remove event data before specific time moment" tab (see fig. 13.2) is used for removing statistics from the database from the start of device functioning till the specific time moment (day and hour). For clearing database using this way the user will need to:
1. Set the cursor to the field "Specify moment" (fig. 14.1)
2. Select the end date and time in the opened calendar (fig. 14.2)
3. Click "Ok" (fig. 14.3)
4. Click "Clear database" (see fig. 13.4).

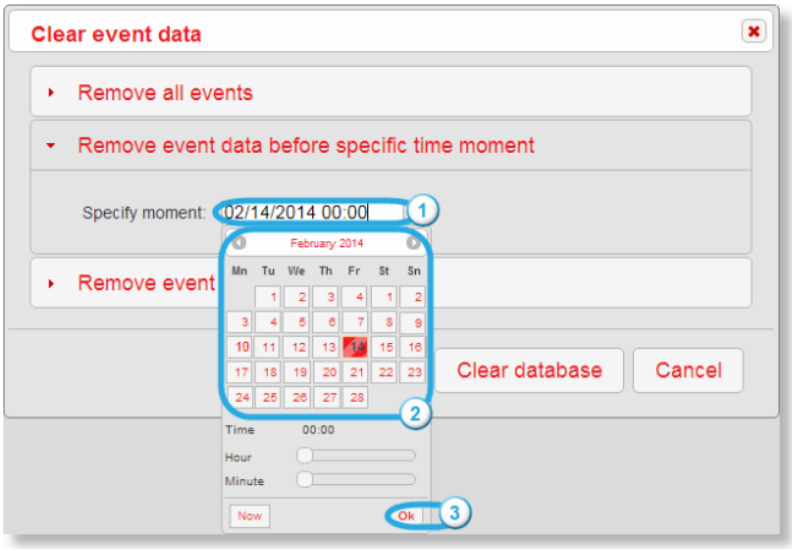

Figure 14: "Remove event data before specific time moment" tab

Way 3. The "Remove event data for period" tab (see fig. 13.3) is used for removing statistics from database for the chosen time period. For clearing database in this way the user will need to:
1. Set the cursor to field "Period start" (fig. 15.1) and choose the date and time of the start period in the opened calendar (fig. 15,3)
2. Set the cursor to field "Period end" (fig. 15.2) and choose the date and time of the end period in the opened calendar (fig. 15.3)
3. Click "Ok" (fig. 15.4)
4. Click "Clear database" (see fig. 13.4).

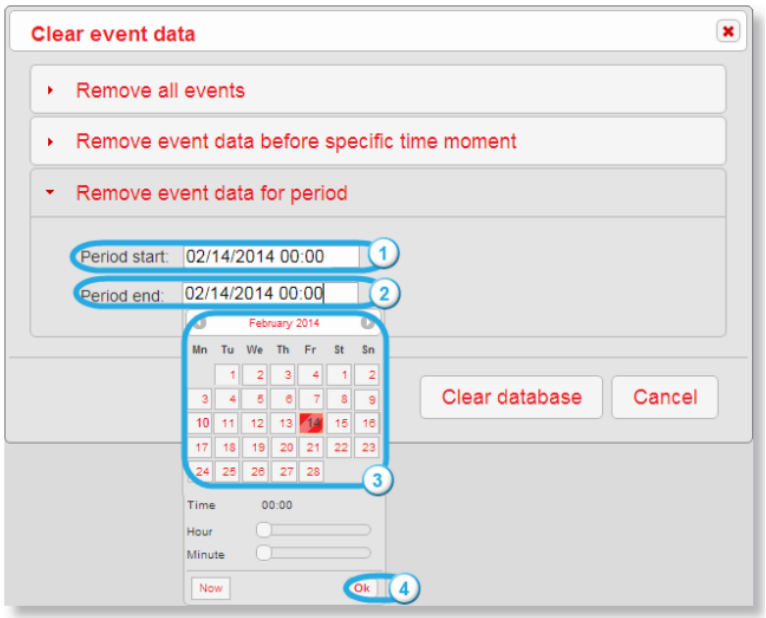

Figure 15: "Remove event data for period" tab

5.2 IP address identification for CountBOX STD-1

CountBOX STD-1 IP address is http://192.168.10.10 by default. It is only used at the first start of CountBOX STD-1. When CountBOX STD-1 IP address is unknown (changed, lost etc.), the user can find it by following the steps in network properties:
1. Enter "Start → Computer → Network"[2] (fig. 16.1)
2. Find CountBOX STD-by domain name[3] (fig. 16.2)

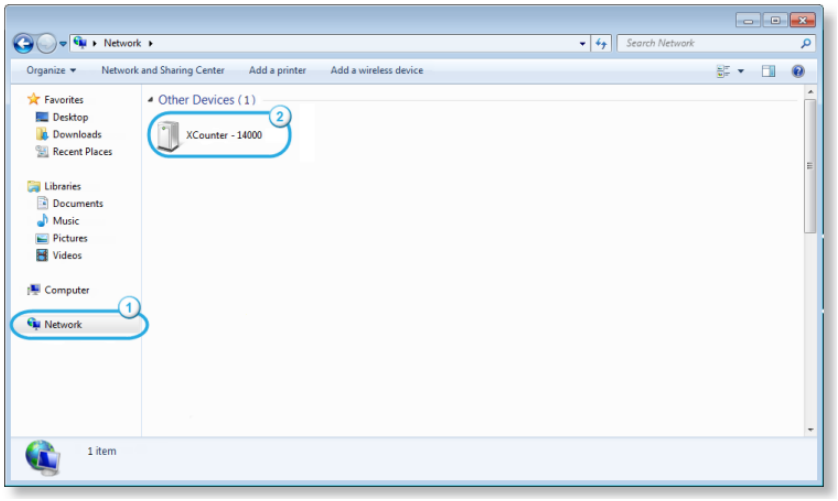

Figure 16: search CountBOX STD-1 in the network

3. Right-click on the icon of the found device and choose the "Properties" item. The "CountBOX STD-1: [device serial number] Properties" dialog box[4] (fig. 17) CountBOX STD-1 IP address will be opened (fig. 17.1).

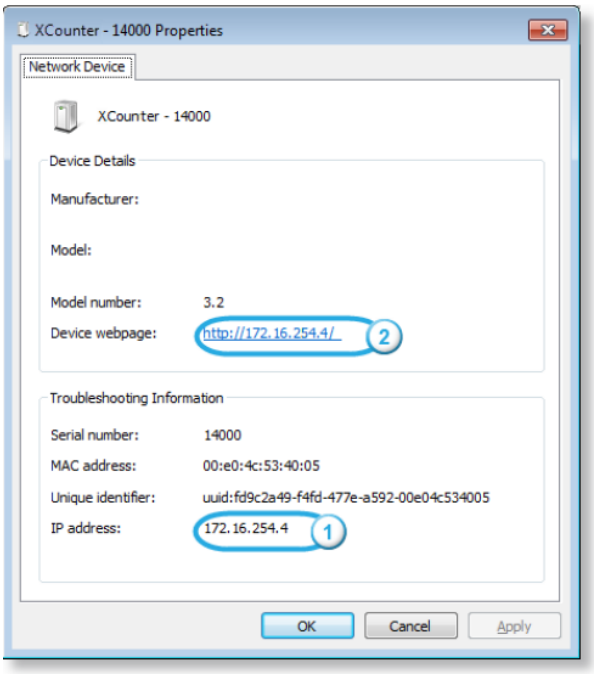

Figure 17: "CountBOX STD-1 — [device serial number] Properties" dialog box

[1] In case of incorrect time indication the message "Clear database error. Incorrect date interval" will appear.
[2] The description of working with Windows®7 OS is given in this document.
[3] The procedure of domain name definition is provided in chapter 5.1.2, ""Network" tab".
[4] In the example of the dialog box in fig. 21 number 14000 corresponds to the device serial number.

The user can open the CountBOX STD-1 web interface in one of the following ways: click the device icon (see fig. 16.2) or follow the link (see fig. 13.2).

Both options will open the CountBOX STD-1 web interface authorization window.

5.3 Editing CountBOX STD-1 User Accounts

The "Users" tab (fig. 18.1) is designed for editing account passwords. In CountBOX STD-1, two accounts are used: the user and admin accounts. The user account can view system and network device settings and make statistical reports. The admin account can edit all CountBOX STD-settings and make statistical reports.
Each account is available to certain device web–interface tabs. The list of available tabs is given in table 7.

Table 7: Available Tabs for Accounts

Account	Available taps
User	"Device", "Reports", "Export"
Admin	"Device", "Video", "Reports", "Export", "Users"

The editing principle is the same for each account. To edit an account, the user will need to:
1. Open the CountBOX STD-1 web interface in the admin account
2. Go to the "Users" tab (fig. 18.1)
3. Enter the current password for the account that the user would like to edit (fig. 18.2)
4. Enter and confirm the new password (fig. 18.3, 18.4). The user's password line can contain digits and Latin, and is case-insensitive. The minimum password length is one character
5. Click "Save" (fig. 18.5).

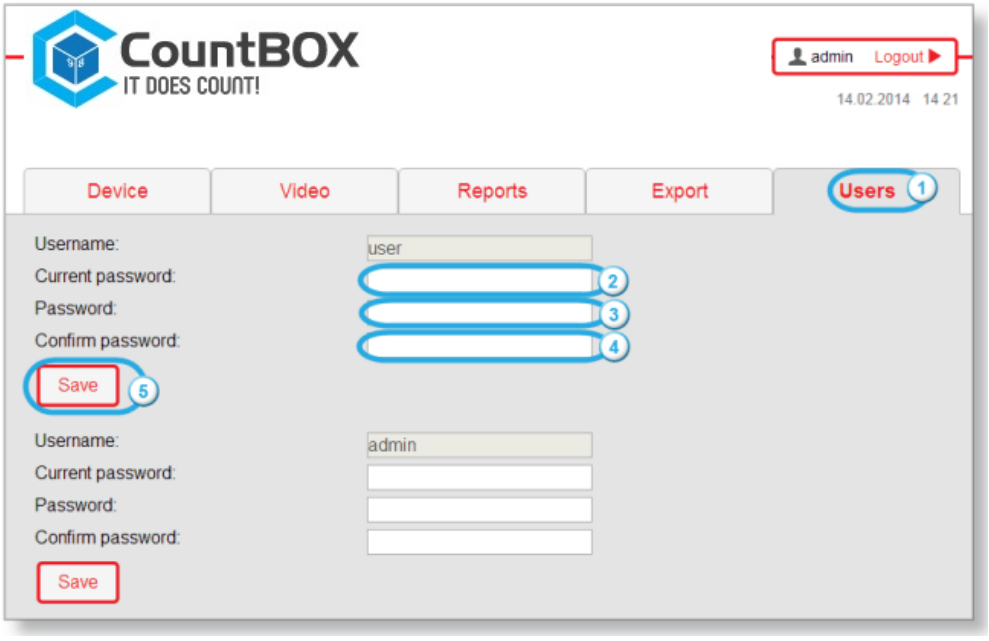

Figure 18: "Users" tab

As a result, the new account password will be saved.

In case of a factory reset[1], the admin password will be recovered for the admin account, and the user password will be recovered for the user account.

5.4 Algorithm Setup

CountBOX STD-1 algorithm setup is used to correct customer counting[2].
Here are the necessary requirements for customer counting:
1. Customers' average speed should not exceed 5 km/h.
2. Installation of the device should be accomplished in line with all the requirements[3].
3. Illumination of the premises where the customers are counted should be sufficient for the operation of the algorithms.

Algorithm setup is in the "Video" tab (fig. 19.1) and consists of two stages:
1. Intersection line setup
2. Object size setup.

5.4.1 Intersection line setup

Intersection line setup is located in the "Line" tab (fig. 19.2). This setup option is used for setting an imaginary line on the video image. Crossing the line in either direction counts as a pass and is recorded in the CountBOX smart device database.

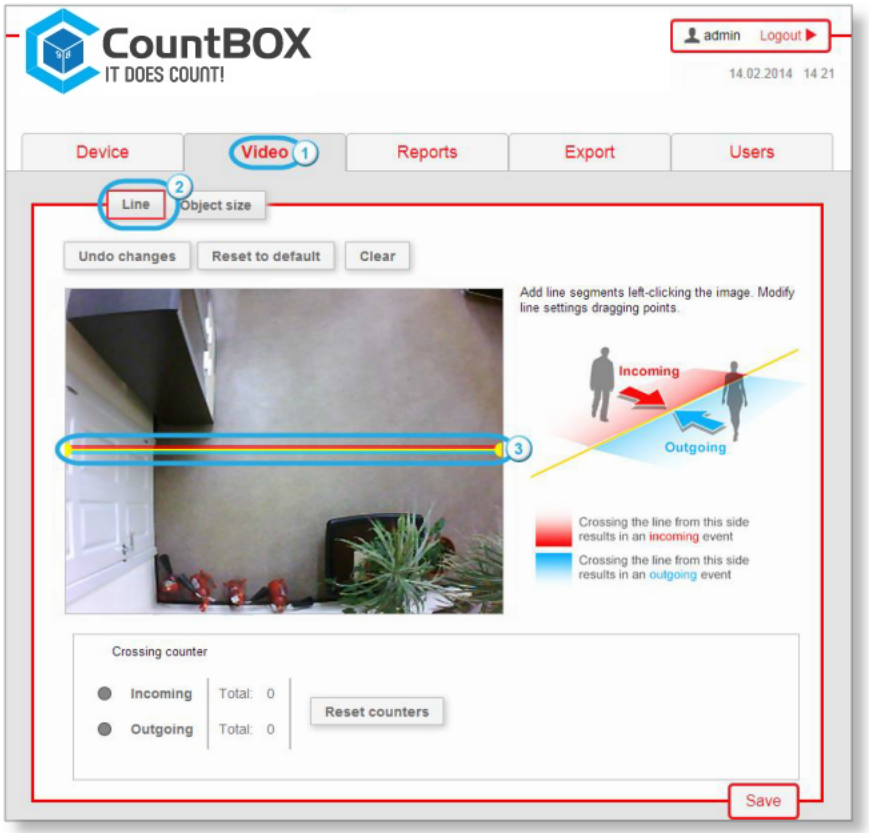

Figure 19: Intersection line setup

[1] Description of the return to default settings procedure is provided in chapter 7, "Factory Reset".
[2] Conditions for customer counting are provided in chapter 1, "Fundamental Principles".
[3] Device installation requirements are provided in chapter 3, "Device Connection and Assembly".

A horizontal intersection line is set on the video image by default (see fig. 19.3). The intersection line is highlighted with three colors, their purpose is given in table 8.

Table 8: Intersection line color appointments

Color	Purpose
Red	Indicates intersection line motion in the "incoming" direction
Yellow	Marks the intersection line center
Blue	Indicates intersection line motion in the "outgoing" direction

There are three ways to set up intersection lines.

Option 1: Dragging the line point.
Dragging the line point can be accomplished with the following steps:
1. Click one of the yellow points, located on the line ends
2. Drag the point to the required spot on the video image (fig. 20).

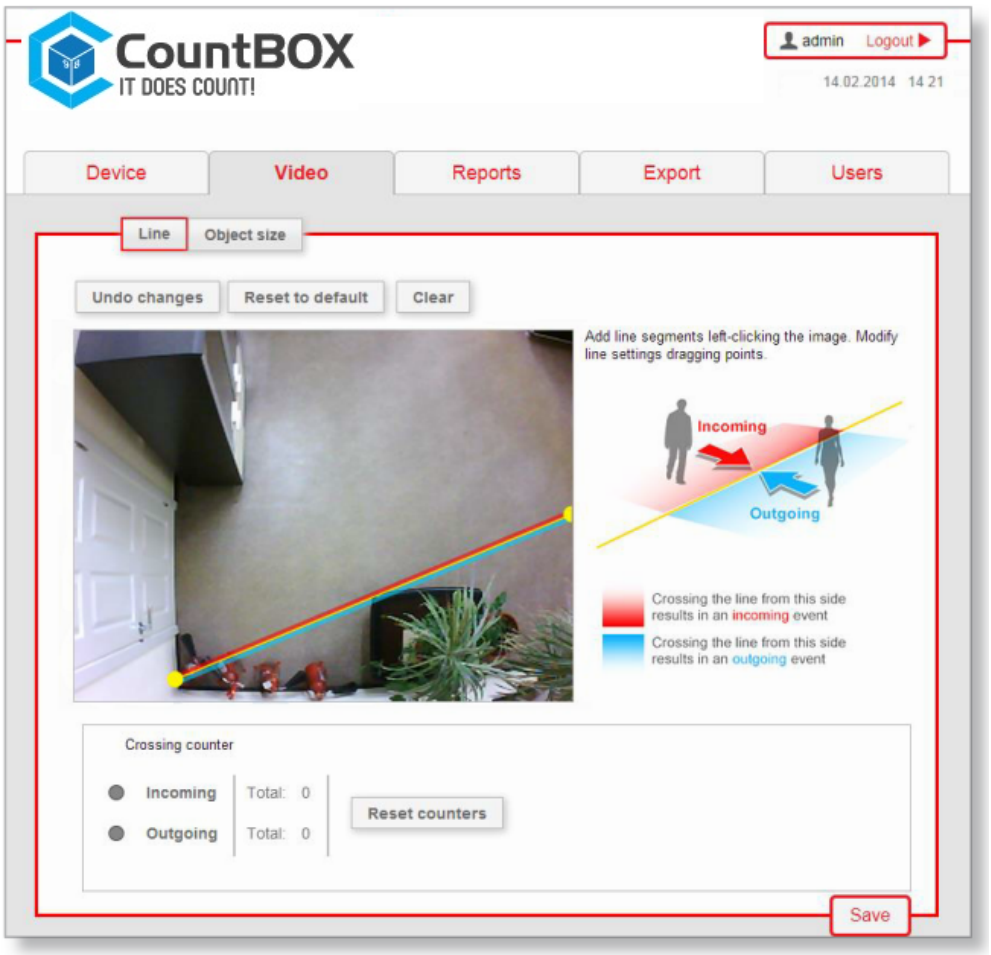

Figure 20: Switching the line reset to default

As a result, the intersection line will change its location.

Option 2: Addition of new links.
The user can add new links by clicking on any spot in the video image (fig. 21).

Figure 21: Adding a new link

As a result, a broken intersection line will be drawn.

Option 3: Creating a new line.
Follow the steps below to create a new line (in case if the line preset by default has been removed):
1. Click the required spot on the video image. A yellow point will then appear on the screen (fig. 22)

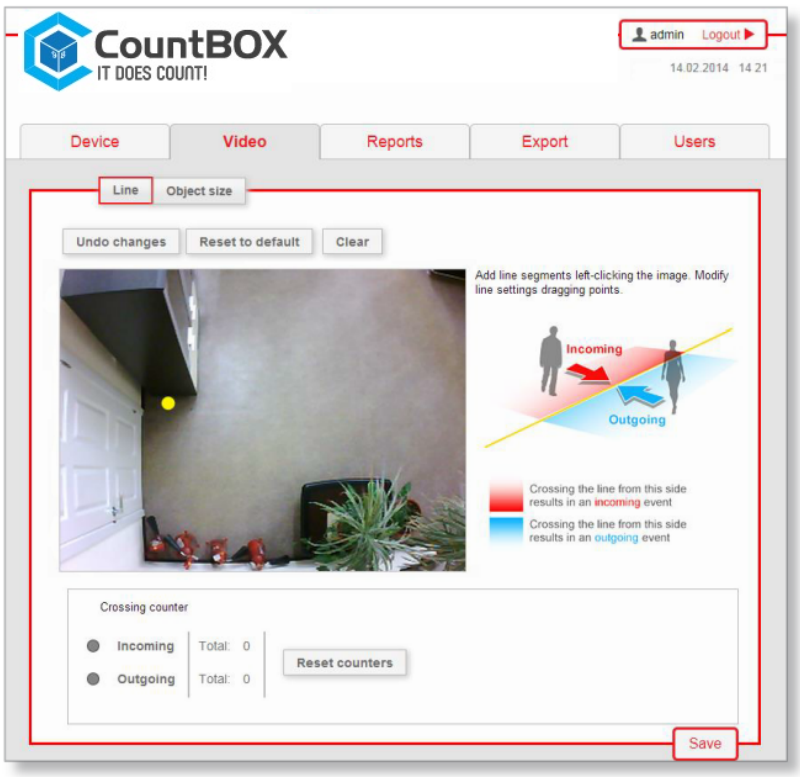

Figure 22: Adding a yellow point

2. Click once again on the video image. As a result, the intersection line will connect the points (fig. 23).

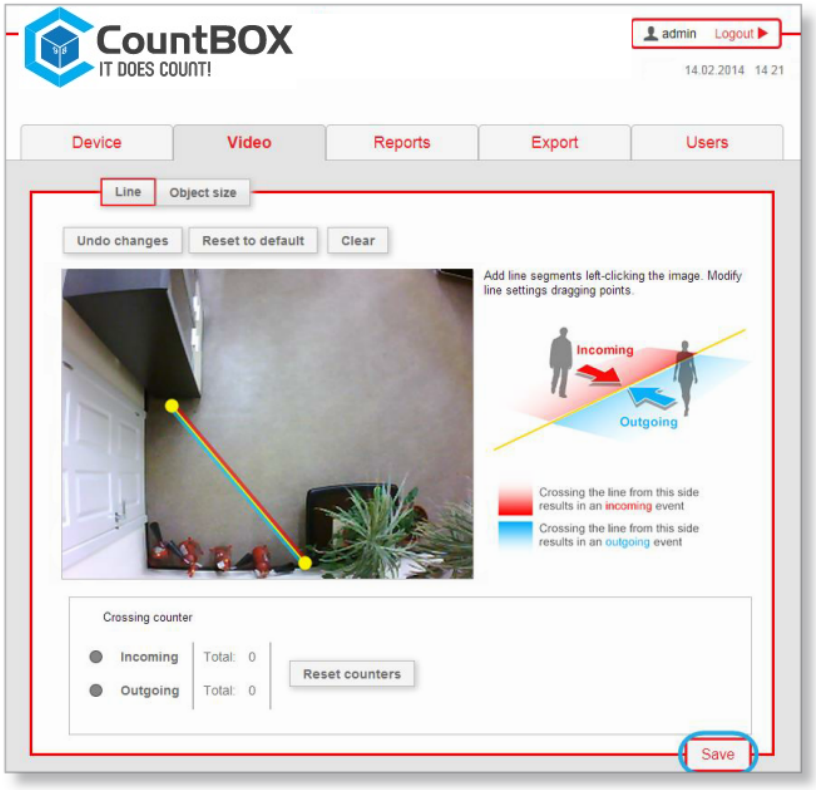

Figure 23: The final intersection line

To apply the settings click "Save" (see fig. 23).
Buttons that are used for setting the intersection line are given in fig. 24

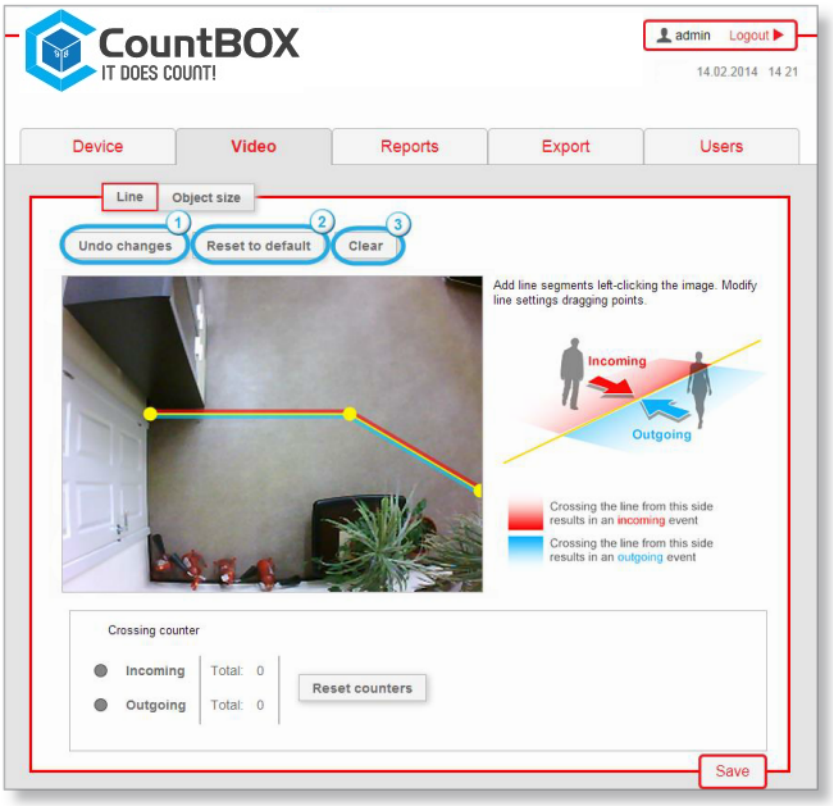

Figure 24: Buttons of the intersection line setting

Description of the buttons is given in table 9.

Table 9: Description of the intersection line-setting buttons

Number in fig. 24	Tab name	Description
1	Undo changes	Return to the last saved position of the intersection line
2	Reset to default	Return the intersection line to the default position
3	Clear	Remove the set intersection line

After setting the intersection line, is over, the user can then set the object size.

5.4.2 Object Size Setup

Object size setup is found in the "**Object**" tab (fig. 25.1). This setting is used to place a person's dimensions on the video image (an example is given in figure 25).
As a rule, object size setup is not required. If CountBOX STD-1 installation was correct[1], by default the object size provides correct calculation results. The user needs to change the object size if the algorithm operation checkup identified omissions or false positives[2].

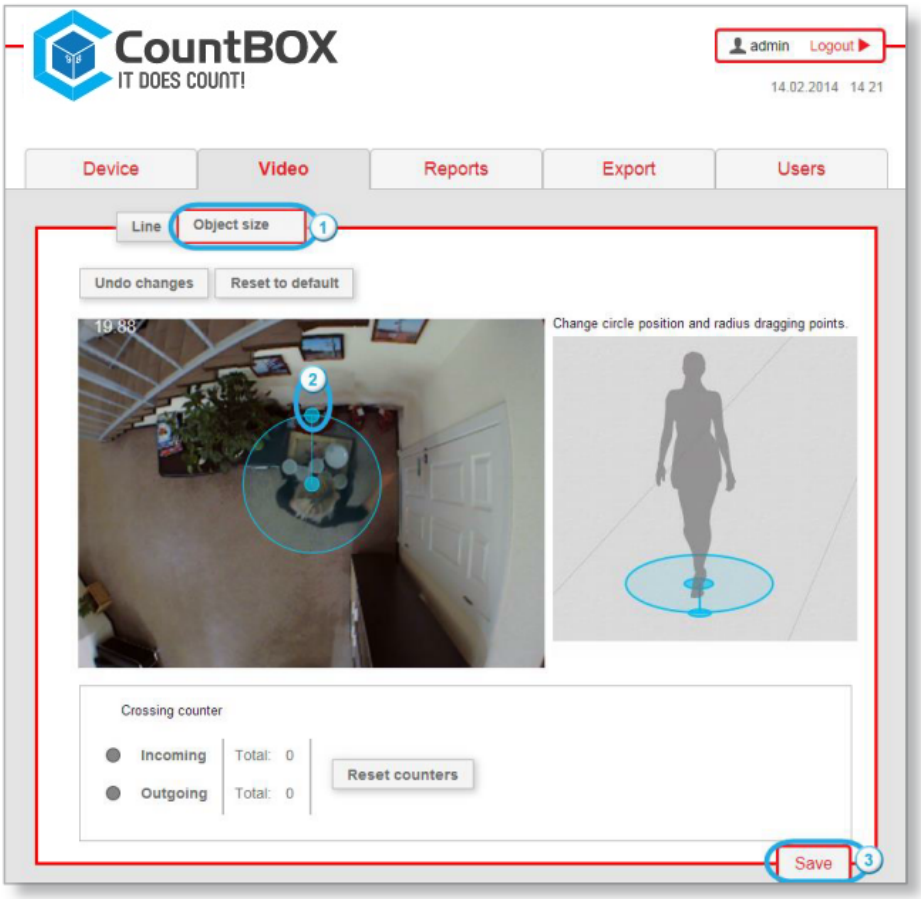

Figure 25: Object size setup

[1] CountBOX smart device installation requirements are provided in chapter 3, "Device Connection and Assembly".
[2] The description of the algorithm setup checkup is provided in chapter 5.4.3, "Algorithm checkup".

The user can set object size on the video image by using a circle with dragging points (see fig. 25.2) in the following way:
1. Choose the point (see fig. 25.2) on the circle by clicking it
2. Change the circle radius by gradually dragging the point. When the radius is smaller than the allowed minimum value, the circle will turn red
3. To apply the user's customizations, click "Save" (see fig. 25.3). Object size setup buttons are shown in figure 26.

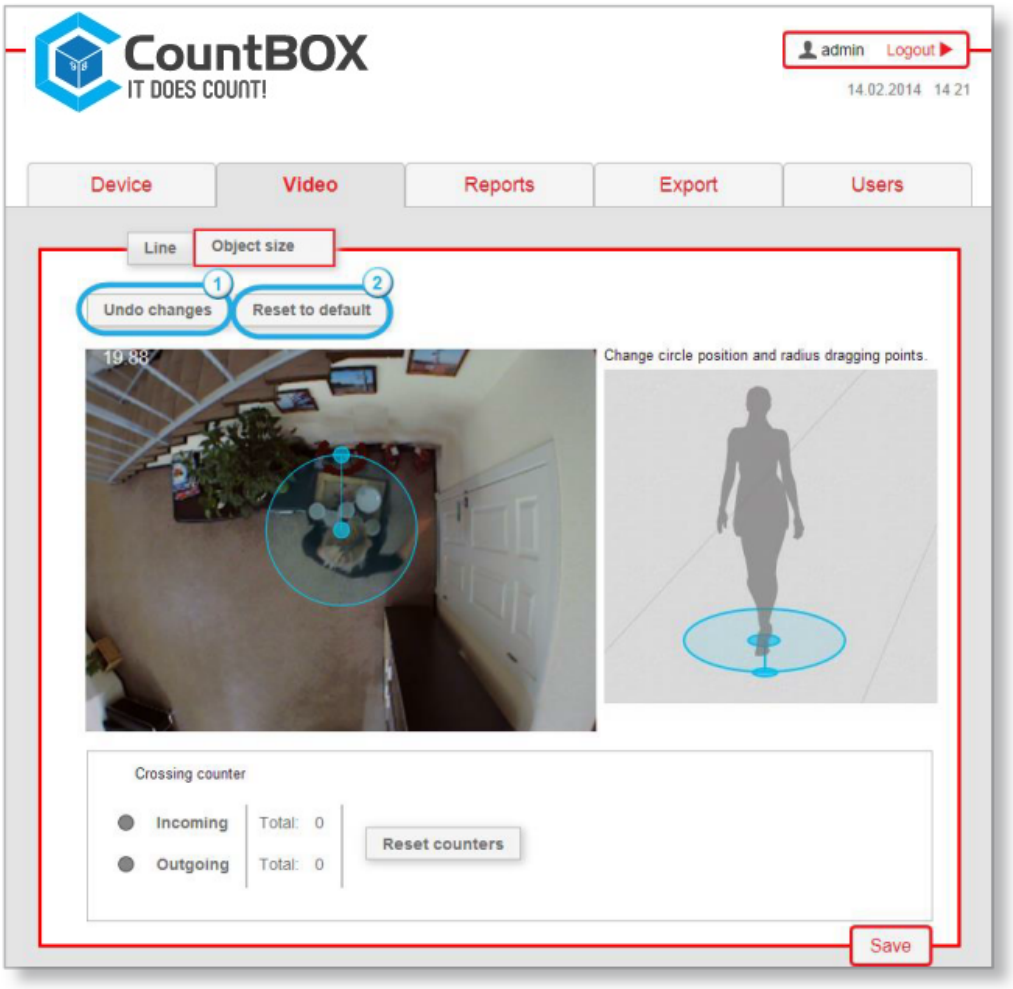

Figure 26: Object Size Setup Buttons

A description of the buttons is given in table 10.

Table 10: Description of object size setup buttons

Number in fig.26	Button name	Purpose
1	Undo changes	Return the circle to the last saved value
2	Reset to default	Set object size to default (this value is **20.2**)

After performing the object size setup it is necessary to check the algorithm setup.

5.4.3 Algorithm checkup

After performing the intersection line setup and object size setup, the CountBOX STD-1 algorithm checkup is required. For the algorithm checkup follow these steps:
1. Go into the location above the entrance of which the device is installed
2. Cross the preset intersection line
3. Check the statistics through the web interface.

To see CountBOX STD-1 statistics, follow these steps:
1. Go to the "Video" tab (see fig. 19.1)
2. Check the incoming and outgoing counter in the "Crossing counter" field, where all line crossings are displayed (fig. 27).

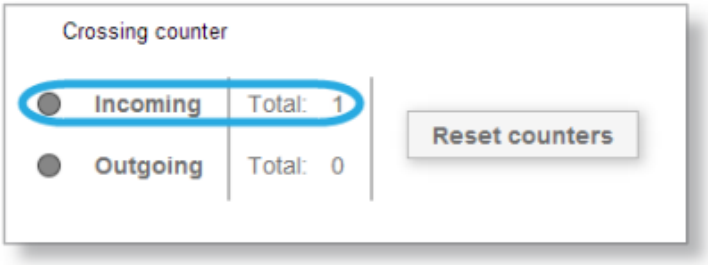

Figure 27: Algorithm checkup

A table view of the "Crossing counter" is given in fig. 28.

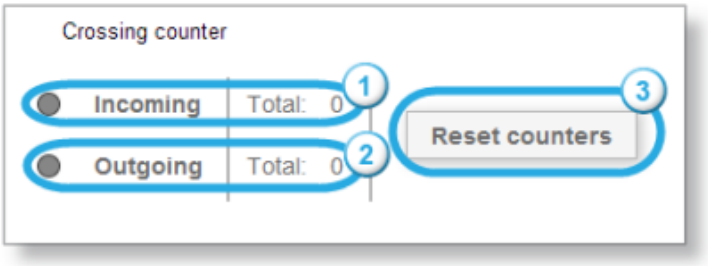

Figure 28: Crossing Counter View

A description of the crossing counter elements is given in table 11.

Table 11: "Crossing counter"

Number in fig. 26	Button name	Purpose
1	"Incoming" line	Shows the number of the incoming passes
2	"Outgoing" line	Shows the number of the outgoing passes
3	"Reset counters" button	Clears the crossing counter

If incoming and outgoing counter data is incorrect, the user needs to edit the intersection line position[1] or object size[2] and then repeat the checkup.

[1] Description of the intersection line editing is provided in chapter 5.4.1, "Intersection line setup".
[2] Description of the object size setup is provided in chapter 5.4.2, "Object size setup".

5.5 Generating Reports

5.5.1 Diagram Report

The "Reports" tab (fig. 29.1) is designed for generating and viewing diagram reports, which shows all incomings within a specific time period. The report does not include incomings if a visitor crossed the line and left the frame on the same side, where he/she came from.
To generate a report the user will need:
3. Choose the report type (fig. 29.2)
4. Set the time period in the calendar (fig. 29.3)
5. Click "Create report" (fig. 29.4).

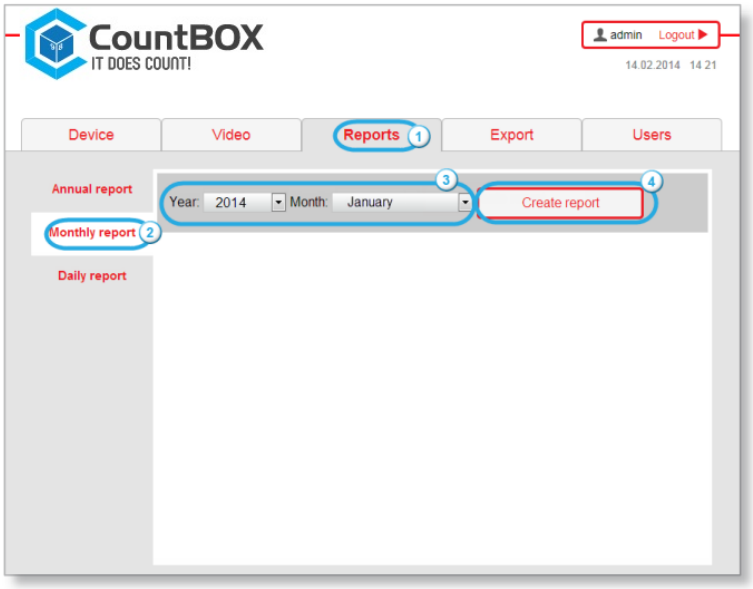

Figure 29: "Reports" tab

The result is shown as an attendance statistics diagram. A sample monthly report is shown in figure 34. In the diagram, the date is represented horizontally, and the number of visitors is represented vertically.

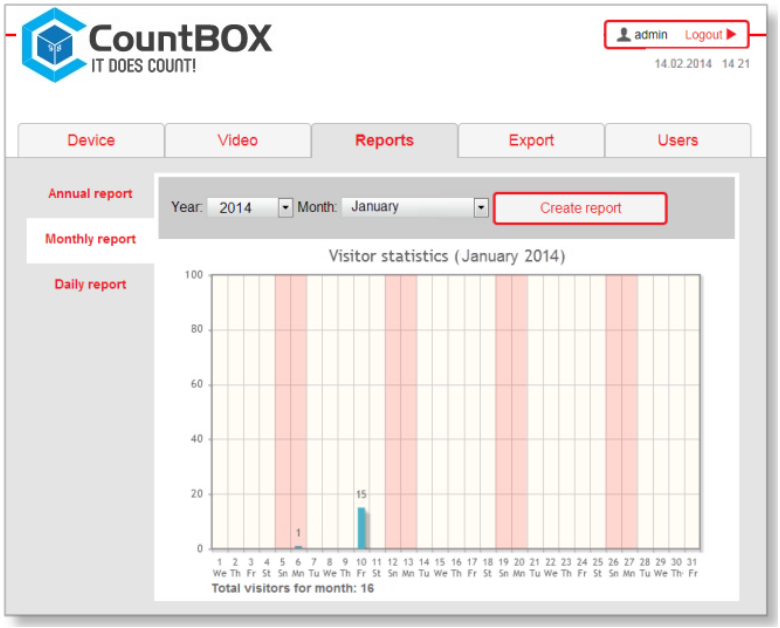

Figure 30: A sample diagram report

6. Description of LED Indicator Functions

The current status of the CountBOX STD-1 can be defined by LED indicator[1].
The LED indicator (fig. 31) informs about the passage through the intersection line, powering the device and record information.

Figure 31: CountBOX STD-1 status indicators

A description of LED indicator functions is given in table 13.

Table 13: LED Indicator Modes

LED indicator color	Standard mode — LED indicator lights for 1 second, then off for 1 second
Yellow color	Factory reset mode[2] — LED indicator lights for 1 second, then off 1 second
Red color	-When crossing the intersection line in the incoming or in the outgoing direction, LED indicator lights 0,5 seconds in length -Record mode: LED indicator lights for 1 second, then off for 1 second -Error mode: LED indicator lights for 0,3 sec., then off for 0,3 seconds -In case of the repeated crossing earlier than within 0,5 seconds, LED indicator continues registration within 0,5 seconds after the last crossing of the intersection line

The record mode of LED indicator is activated in the following cases:
1. Firmware update
2. Saving device settings.

The error mode of LED indicator is activated in following cases:
1. When the LED indicator detects incorrect device time before error reset[3]

[1] Indicator is a LED used for device status notification.
[2] Description of the return to default settings procedure is provided in chapter 7, "Factory Reset".
[3] Description of the error reset is provided in chapter 8.2.11, "Error reset".

2. After factory reset[1], until the beginning of Database (DB) clearing. If the LED indicator continuously comes on with any color or is off, it means a device operating failure. In this case, device reload by powering off is recommended. After powering off, the user should wait 5-10 seconds and then turn the CountBOX STD-1 back on. If LED indicator is flashing with red color, disconnecting the device from the power-line supply is not recommended.

[1] Description of the return to default settings procedure is provided in chapter 7, "Factory reset".

7. Factory Reset

A factory reset allows the user to uninstall the de-update of the CountBOX STD-1 software version and revert to default settings. These settings include:
1. An NTP server address .
2. A timezone .
3. All settings of the "Network" tab.
4. Account passwords.

To perform the factory reset, the user must:
1. Turn off the device's power supply .
2. Turn the enclosure in a clockwise direction and remove (fig. 32).

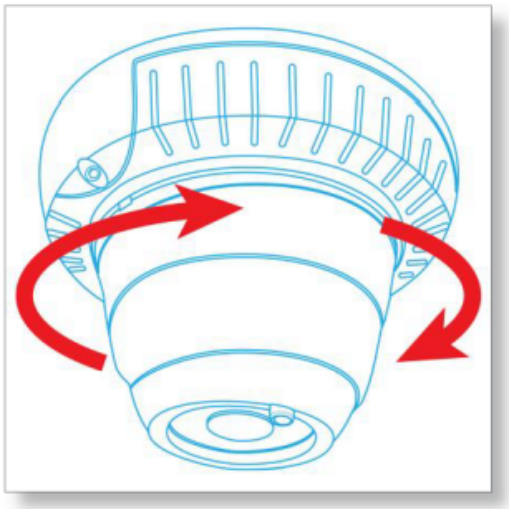

Figure 32: The enclosure turning

3. Press the reset button (fig. 32) and hold it, turning the device power supply on. The button should be held until the LED indicator begins flashing[1]

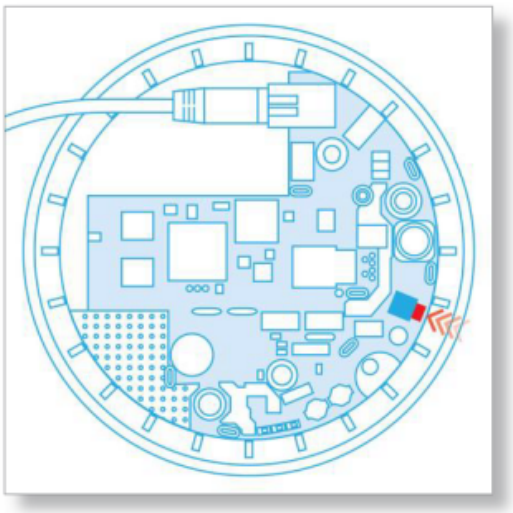

Figure 33: The recovery button

[1] Description of LED indicator functions in the recovery process is provided in chapter 6, "Description of LED Indicator Functions".

4. Release the button. LED indicator will start flashing with red color. This behavior is similar to device operation in error mode. Then it is necessary to sign in CountBOX STD-1 web interface. The "Recovery" dialog box will appear after that (fig. 34), prompting the user to restore the data or to perform the factory reset.

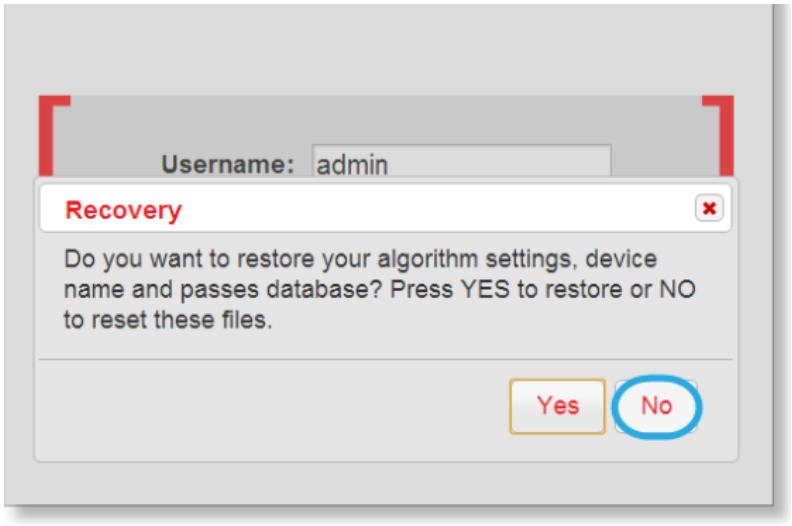

Figure 34: The recovery dialog box

If the user clicks "No" (see fig. 34), the CountBOX STD-1 software will be restored to the version that had been installed by default. As a result, the following data and settings will be removed:
1. Statistics.
2. Device name.
3. Indicator status "Use hostname as device name".
4. Position of the intersection line and object size settings.
If the user clicks "Yes" (see fig. 34), the above data and parameters will be saved. The other settings will be restored to default values.

LED indicator will return to standard mode after the decision was done.

8. CountBOX DELUXE service cloud software interface

This chapter is intended for use by developers involved in the creation of automatic statistics collection and management systems for CountBOX Deluxe STD-1.
Link to connect: http://deluxe.count-box.com/

8.1 Web API

8.1.1 API access address

http://deluxe.count-box.com/api/xml/ - to receive data in XML format
http://deluxe.count-box.com/api/json/ - to receive data in JSON format

8.1.2 Authentication

API authentication requires POST request with specified parameter **access_token** with a token value obtained via token passing method (token expires at defined time)

8.2 API requests

Token

Receiving token: [GET]
http://deluxe.count-box.com/api/{формат}/token/get/{auth}

{auth} value is email:password in base64 i.e. *base64("email:password")*
for example http://deluxe.count-box.com/api/json/token/get/Z3JR1c0BnbWFpbC5jb206cmVzdGVy

Response

```
key - token, should be obtained via POST request 'access_token=key'
```

XML response example:

```
<Token xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <key>sample string 1</key>
</Token>
```

JSON response example:

```
{
  "key": "sample string 1"
}
```

8.2.1 Locations

Locations list receiving: [POST]

http://deluxe.count-box.com/api/{format}/point/all/

Response

POST data

```
access_token – received token          (mandatory)
```

Example

```
access_token=34424109BC2D728FA33C2606B5DECA2C71BF146C7848922D88D3B25DC32963AE6F814C3E04C8CC
```

Response

```
An array containing,
id      - location identifier
name    - name of the location
IdTt    - location code (ERP)
address – location address
```

XML response example:

```
<ArrayOfPoint xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <Point>
    <id>1</id>
    <name>sample name 1</name>
    <IdTt>sample code 1</IdTt>
    <address>sample address 1</address>
  </Point>
  <Point>
    <id>2</id>
    <name>sample name 2</name>
    <IdTt>sample code 2</IdTt>
    <address>sample address 2</address>
  </Point>
  <Point>
    <id>3</id>
    <name>sample name 3</name>
    <IdTt>sample code 3</IdTt>
```

```
    <address>sample address 3</address>
  </Point>
</ArrayOfPoint>
```

JSON response example:

```
[
  {
    "id": 1,
    "name": "sample name 1",
    "IdTt": "sample code 1",
    "address": "sample address 1"
  },
  {
    "id": 2,
    "name": "sample name 2",
    "IdTt": "sample code 2",
    "address": "sample address 2"
  },
  {
    "id": 3,
    "name": "sample name 3",
    "IdTt": "sample code 3",
    "address": "sample address 3"
  }
]
```

8.2.2 Finances

Financial data adding: [POST]

http://deluxe.count-box.com/api/{format}/point/addfinance/

Request

POST data

```
access_token    - token received          (mandatory)
id              - location identifier     (mandatory)
```

```
profit          - daily earnings          (mandatory)
checks          - receipts quantity       (mandatory)
```

```
date            - actual date             (mandatory)
```

Example

```
access_token=34424109BC2D728FA33C2606B5DECA2C71BF146C7848922D88D3B25DC32963AE6F814C3E04C8CC
&id=1
&profit=123456.85
&checks=100
&date=2014-09-26T09:42:48.7966108
```

Response

```
result – result of adding (1 - ok, 0 - error)
```

XML response example:

```
<Response xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <result>1</result>
</Response>
```

JSON response example:

```
{
  "result": 1
}
```

Financial data getting: [POST]

http://deluxe.count-box.com/api/{format}/point/getfinance/

Response

POST data

```
access_token     - token received                  (mandatory)
id               - location identifier             (mandatory)
                   id may be send as single identifier, and also as a list with
                   separator ','
                   for example id=1 or id=1,2,3,4
                   to require all the locations simultaneously use 'all'
                   for example id=all
datebegin        - starting date                   (mandatory)
dateend          - final date                      (mandatory)
```

```
groupType       - type of data grouping interval    (mandatory)
                  groupType = 1 - day
                  groupType = 2 - month
                  groupType = 3 - year
isAllTime       - no location operation schedule    (not mandatory)
                - with location working schedule    (by default)
```

Example

```
access_token=34424109BC2D728FA33C2606B5DECA2C71BF146C7848922D88D3B25DC32963AE6F814C3E04C
8CC
&id=1
&datebegin=2014-09-21T00:00:00
&dateend=2014-09-23T23:00:00
&groupType=1
&isAllTime=true
```

Response

```
An array containing,
id          - location identifier
profit      - earnings summary
checks      - receipts quantity
conversion  - conversion
datebegin   - starting date (according to the preferred type of data grouping interval)
dateend     - final date    (according to the preferred type of data grouping interval)
```

XML response example:

```
<ArrayOfFinance xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://
www.w3.org/2001/XMLSchema">
  <Finance>
    <id>1</id>
    <profit>1254.0</profit>
    <checks>3</checks>
    <conversion>4.1</conversion>
    <datebegin>2014-09-21T00:00:00+04:00</date>
    <dateend>2014-09-21T23:59:59+04:00</date>
  </Finance>
  <Finance>
    <id>1</id>
```

```
    <profit>12345.0</profit>
    <checks>3</checks>
    <conversion>4.1</conversion>
    <datebegin>2014-09-22T00:00:00+04:00</date>
    <dateend>2014-09-22T23:59:59+04:00</date>
  </Finance>
  <Finance>
    <id>1</id>
    <profit>12345.0</profit>
    <checks>3</checks>
    <conversion>4.1</conversion>
    <datebegin>2014-09-23T00:00:00+04:00</date>
    <dateend>2014-09-23T23:59:59+04:00</date>
  </Finance>
</ArrayOfFinance>
```

JSON response example:

```
[
  {
    "id": 1,
    "profit": 1254.0,
    "checks": 3,
    "conversion": 4.1,
    "datebegin": "2014-09-21T00:00:00",
    "dateend": "2014-09-21T23:59:59",
  },
  {
    "id": 1,
    "profit": 12345.0,
    "checks": 3,
    "conversion": 4.1,
    "datebegin": "2014-09-22T00:00:00",
    "dateend": "2014-09-22T23:59:59",
  },
  {
    "id": 1,
    "profit": 12345.0,
    "checks": 3,
```

```
    "conversion": 4.1,
    "datebegin": "2014-09-23T00:00:00",
    "dateend": "2014-09-23T23:59:59",
  }
]
```

Getting financial data with the visitors data: [POST]

http://deluxe.count-box.com/api/{формат}/point/getfullfinance/

Request

POST data

```
access_token     - received token                 (mandatory)
id               - location identifier            (mandatory)
                   id may be send as single identifier, and also as a list with
                   separator ','
                   for example id=1 or id=1,2,3,4
                   to require all the locations simultaneously use 'all'
                   for example id=all
datebegin        - starting date                   (mandatory)
dateend          - final date                      (mandatory)
groupType        - type of data grouping interval  (mandatory)
                   groupType = 1 - day
                   groupType = 2 - month
                   groupType = 3 - year
isAllTime        - no location operation schedule  (not mandatory)
                 - with location working schedule  (by default)
```

Example

```
access_token=34424109BC2D728FA33C2606B5DECA2C71BF146C7848922D88D3B25DC32963AE6F814C3E04C
8CC
&id=1
&datebegin=2014-09-21T00:00:00
&dateend=2014-09-23T23:00:00
&groupType=1
&isAllTime=true
```

Response

```
An array containing,
id          - location identifier
profit      - earnings summary
checks      - receipts quantity
conversion  - conversion
datebegin   - starting date (according to the preferred type of data grouping interval)
dateend     - final date    (according to the preferred type of data grouping interval)
in          - in traffic for the preferred type of data grouping interval
out         - out traffic for the preferred type of data grouping interval
```

XML response example:

```
<ArrayOfFinance xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://
www.w3.org/2001/XMLSchema">
  <Finance>
    <id>1</id>
    <profit>1254.0</profit>
    <checks>3</checks>
    <conversion>4.1</conversion>
    <datebegin>2014-09-21T00:00:00+04:00</date>
    <dateend>2014-09-21T23:59:59+04:00</date>
    <in>500</in>
    <out>500</out>
  </Finance>
  <Finance>
    <id>1</id>
    <profit>12345.0</profit>
    <checks>3</checks>
    <conversion>4.1</conversion>
    <datebegin>2014-09-22T00:00:00+04:00</date>
    <dateend>2014-09-22T23:59:59+04:00</date>
    <in>500</in>
    <out>500</out>
  </Finance>
  <Finance>
    <id>1</id>
    <profit>12345.0</profit>
    <checks>3</checks>
    <conversion>4.1</conversion>
```

```
    <datebegin>2014-09-23T00:00:00+04:00</date>
    <dateend>2014-09-23T23:59:59+04:00</date>
    <in>500</in>
    <out>500</out>
  </Finance>
</ArrayOfFinance>
```

JSON response example:

```
[
  {
    "id": 1,
    "profit": 1254.0,
    "checks": 3,
    "conversion": 4.1,
    "datebegin": "2014-09-21T00:00:00",
    "dateend": "2014-09-21T23:59:59",
    "in": 500,
    "out": 500
  },
  {
    "id": 1,
    "profit": 12345.0,
    "checks": 3,
    "conversion": 4.1,
    "datebegin": "2014-09-22T00:00:00",
    "dateend": "2014-09-22T23:59:59",
    "in": 500,
    "out": 500
  },
  {
    "id": 1,
    "profit": 12345.0,
    "checks": 3,
    "conversion": 4.1,
    "datebegin": "2014-09-23T00:00:00",
    "dateend": "2014-09-23T23:59:59",
    "in": 500,
    "out": 500
```

```
  }
]
```

8.2.3 Visitors

Getting visitors' quantity in the location at the defined period of time: [POST]
http://deluxe.count-box.com/api/{format}/point/getvisitors/

Request

POST data

```
access_token     - received token                 (mandatory)
id               - location identifier            (mandatory)
                   id may be send as single identifier, and also as a list with
                   separator ','
                   for example id=1 or id=1,2,3,4
                   to require all the locations simultaneously use 'all'
                   for example id=all
datetime         - requested date and time        (mandatory)
```

Example

```
access_token=34424109BC2D728FA33C2606B5DECA2C71BF146C7848922D88D3B25DC32963AE6F814C3E04C
8CC
&id=1
&datetime=2014-09-21T09:43:00
```

Response

```
id          - location identifier
datetime    - date of the recorded attendance
visitor     - visitors quantity at the requested date and time  (calculated value)
```

XML response example:

```
<ArrayOfVisitor xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://
www.w3.org/2001/XMLSchema">
  <Visitor>
      <id>1</id>
      <visitor>20</visitor>
      <datetime>2014-09-21T09:30:00+04:00</datetime>
  </Visitor>
</ArrayOfVisitor>
```

JSON response example:

```
[
  {
    "id": 1,
    "visitor": 2,
    "datetime": "2014-09-21T09:30:00"
  }
]
```

Getting visitors' attendance for the defined time period: [POST]

http://deluxe.count-box.com/api/{формат}/point/getattendance/

Request

POST data

```
access_token     - received token                (mandatory)
id               - location identifier           (mandatory)
                   id may be send as single identifier, and also as a list with
                   separator ','
                   for example id=1 or id=1,2,3,4
                   to require all the locations simultaneously use 'all'
                   for example id=all
datebegin        - date and time request starts from                    (mandatory)
dateend          - date and time request ends before                    (mandatory)
groupType        - type of data grouping interval    (mandatory)
                   groupType = 1 – 15 minutes
                   groupType = 2 – 1 hour
                   groupType = 3 – 1 day
isAllTime        - no location operation schedule    (not mandatory)
                 - with location working schedule    (by default)
```

Example

```
access_token=34424109BC2D728FA33C2606B5DECA2C71BF146C7848922D88D3B25DC32963AE6F814C3E04C
8CC
&id=1
&datebegin=2014-09-21T09:00:00
&dateend=2014-09-21T23:00:00
&groupType=1
&isAllTime=true
```

Response

```
id          - location identifier
in          - in traffic
out         - out traffic
datebegin   - date and time interval grouping starts from
dateend     - date and time interval grouping ends before
```

XML response example:

```
<ArrayOfAttendance xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http
://www.w3.org/2001/XMLSchema">
  <Attendance>
    <id>1</id>
    <in>2</in>
    <out>3</out>
    <datebegin>2014-09-21T09:00:00+04:00</datebegin>
    <dateend>2014-09-21T09:15:00+04:00</dateend>
  </Attendance>
  <Attendance>
    <id>1</id>
    <in>2</in>
    <out>3</out>
    <datebegin>2014-09-21T09:15:00+04:00</datebegin>
    <dateend>2014-09-21T09:30:00+04:00</dateend>
  </Attendance>
  <Attendance>
    <id>1</id>
    <in>2</in>
    <out>3</out>
    <datebegin>2014-09-21T09:30:00+04:00</datebegin>
    <dateend>2014-09-21T09:45:00+04:00</dateend>
  </Attendance>
    ...
</ArrayOfAttendance>
```

JSON response example:

```
 [
  {
    "id": 1,
```

```
    "in": 2,
    "out": 3,
    "datebegin": "2014-09-21T09:00:00",
    "dateend": "2014-09-21T09:15:00"
  },
  {
    "id": 1,
    "in": 2,
    "out": 3,
    "datebegin": "2014-09-21T09:15:00",
    "dateend": "2014-09-21T09:30:00"
  },
  {
    "id": 1,
    "in": 2,
    "out": 3,
    "datebegin": "2014-09-21T09:30:00",
    "dateend": "2014-09-21T09:45:00"
  }
    ...
]
```

Getting SIM-report data for the defined period of time: [POST]

http://deluxe.count-box.com/api/{format}/point/getsimdata/

Request

POST data

```
access_token     - received token                                          (m
andatory)
id               - location identifier                                     (m
andatory)
                  id may be send as single identifier, and also as a list with
                  separator ','
                  for example id=1 or id=1,2,3,4
                  to require all the locations simultaneously use 'all'
```

```
                  for example id=all
datebegin       - date of the first week(month)                                    (m
andatory)
dateend         - date of the second week (month)                                  (m
andatory)
isByWeek        - interval type. week or month(by default)                      (not m
andatory)
```

For example

```
access_token=34424109BC2D728FA33C2606B5DECA2C71BF146C7848922D88D3B25DC32963AE6F814C3E04C
8CC
&id=1
&datebegin=2014-08-27
&dateend=2014-09-04
&isByWeek=true
```

Response

```
id          - location identifier
visitors    - visitors quantity
checks      - receipts quantity
profits     - earnings summary
date        - date and time interval grouping started from
```

XML response example:

```
<ArrayOfPoints xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://w
ww.w3.org/2001/XMLSchema">
  <Point>
    <id>1</id>
    <First>
      <datebegin>2014-08-25</datebegin>
      <dateend>2014-08-31</dateend>
      <visitors>2</visitors>
      <checks>3</checks>
      <profits>11.0000</profits>
    </First>
    <Second>
      <datebegin>2014-09-01</datebegin>
      <dateend>2014-09-07</dateend>
      <visitors>2</visitors>
      <checks>3</checks>
```

```
      <profits>11.0000</profits>
    </Second>
  </Point>
  <Point>
    <id>2</id>
    <First>
      <datebegin>2014-08-25</datebegin>
      <dateend>2014-08-31</dateend>
      <visitors>12</visitors>
      <checks>30</checks>
      <profits>181.0000</profits>
    </First>
    <Second>
      <datebegin>2014-09-01</datebegin>
      <dateend>2014-09-07</dateend>
      <visitors>12</visitors>
      <checks>30</checks>
      <profits>181.0000</profits>
    </Second>
  </Point>
</ArrayOfPoints>
```

JSON response example:

```
 [
{
  "id": 1,
  "first":
    {
       "datebegin": "2014-08-25",
       "dateend": "2014-08-31",
       "visitors": 2,
       "checks":  3,
       "profits": 11.000
    },
  "second":
    {
       "datebegin": "2014-09-01",
       "dateend": "2014-09-07",
```

```
        "visitors": 2,
        "checks":  3,
        "profits": 11.000
    }
}
{
  "id": 2,
  "first":
    {
        "datebegin": "2014-08-25",
        "dateend": "2014-08-31",
        "visitors": 12,
        "checks":  30,
        "profits": 181.000
    } ,
  "second":
    {
        "datebegin": "2014-09-01",
        "dateend": "2014-09-07",
        "visitors": 12,
        "checks":  30,
        "profits": 181.000
    }
}
]
```


8.2.4 Profile

Getting users data: [GET]
http://deluxe.count-box.com/api/{format}/profile/get/

Request
GET data

```
access_token    - received token                                        (m
andatory)
```

For example

```
access_token=34424109BC2D728FA33C2606B5DECA2C71BF146C7848922D88D3B25DC32963AE6F814C3E04C
8CC
```

XML response example:

```
<User xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org
/2001/XMLSchema">
    <username>user</username>
    <email>user@user.ru</email>
    <firstname>John</firstname>
    <lastname>Smith</lastname>
</User>
```

JSON response example:

```
[
  {
    "username": "user"
    "email": "user@user.ru",
    "firstname": "John",
    "lastname": "Smith"
  }
]
```

User's password recovery Request: [POST]
http://deluxe.count-box.com/api/{format}/profile/recoverpassword/

Request
POST data

```
Email    - user's email                                                    (m
andatory)
```

For example

```
Email=user@user.ru
```

XML response example:

```
<ArrayOfString xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://w
ww.w3.org/2001/XMLSchema">
    <string>status</string>
    <string>/recoverpassword/be0dbce6-90d7-4cad-9b57-02b50a7097bc</string>
</ArrayOfString>
```

JSON response example:

```
["status","/recoverpassword/be0dbce6-90d7-4cad-9b57-02b50a7097bc"]
```

8.2.5 Error

Errors format description

Response

```
error       - error

Message     - response with an error

ErrorCode   - error code                                                (not m
andatory)
```

Errors code

```
403 – access forbidden

504 – token is expired
```

XML response example:

```
<Error>

    <error>1</error>

    <Message>error auth data</Message>

    <ErrorCode>200</ErrorCode>

</Error>
```

JSON response example:

```
{

    "error": 1

    "Message":"test error",

    "ErrorCode":200

}
```

If response contains more than one error

XML response example:

```
<Errors>

    <Error>

        <Message>error data</Message>

        <ErrorCode>100</ErrorCode>

    </Error>

    ...

    <Error>

        <Message>error data ... </Message>

        <ErrorCode>100</ErrorCode>

    </Error>
```

```
</Errors>
```

JSON response example:

```
Errors[
{
    "error": 1
    "Message":"test error",
    "ErrorCode":200
},
...
]
```

Appendix A. Interface description

Table Appendix A.1: "Device" tab

Name of the element	Element description	Additional information	Description chapter
"System" tab			
Model name	The field contains device model information	Not editable	5.1.1
Firmware version	The field contains information about CountBOX STD-1 firmware version	Not editable	
Serial number	The field contains information about CountBOX STD-1 serial number	Not editable	
Device name	The field contains information about the device name	Editable, any symbols are allowed	
NTP time synchronization server	The field is used for entering information about an IP address or server hostname for time synchronization in CountBOX STD-1	Editable	
Date and time	The field contains information about the current date	Can be edited in the calendar. The field is filled in after choosing the time zone in "Timezone" field	
Date and time format	The field contains information about The selected date and time format	Can be edited in a drop-down menu	
Timezone	The field contains information about the time zone	Can be edited in a drop-down menu, time zone range is from UTC-10 to UTC+12	
Use the hostname as the device name	The checkbox is used for providing the device name which is similar to domain name	After setting the checkbox device, name cannot be edited	
Save	The button is used to apply settings	-	
"Network" tab			
MAC	The field displays CountBOX STD-1 MAC address	Not editable	5.1.2
Hostname (RFC1123)	The field displays CountBOX STD-1 domain name	RFC1123 — the link to documentation with hostname installation rules. The maximum length of a hostname is 63 symbols	
Obtain IP address automatically (DHCP)	The checkbox is used for receiving network settings from DHCP server	After setting the checkbox the fields "IP address", "Network mask", "Gateway", "DNS" are disable	
IP address	The field contains the CountBOX STD-1 IP address	Editable, onlyIPv4-addresses are allowed	
Network mask	The field contains information about the network mask	Editable, only IPv4-addresses are allowed	
Gateway	The field contains information about the gateway IP address, which is used for	Editable, only IPv4-addresses are allowed	

	operating CountBOX STD-1 with a computer via other subnet		
DNS	The field contains information about DNS server IP address	Is specified, if in the field "NTP time synchronization server" of the inset "System" the hostname is given instead of an IP address. Editable	
Protocol	The radio button allows user to choose a protocol for data transfer (http or https)	-	
Port	The field contains information about the port which is listened by the web server	For https port 443 (by default) is used, for http port 80 and ports from the range 1024—32668 (by default) are used	
Manual edit	The setup area contains checkboxes allowing the user to edit fields "Subnet mask", "Gateway", "DNS"	Appears after activation of the checkbox "Obtain IP address automatically (DHCP)"	
Save	The button is used to apply new settings	-	
"Miscellaneous" tab			
Download log files	The button is used for downloading log archives	-	5.1.3
Clear database	the button is used for removing statistics for the whole device working period, before a specific time moment or for a given period of time	-	
Reboot device	The button is used for device rebooting via web interface	-	

Table Appendix A.2: "Video" tab

Name of the element	Element description	Description chapter
Reset counters	The button is used to clear the incoming and outgoing counters	5.4.3
"Line" tab		
Undo changes	The button is used to return to the last saved settings	5.4.1
Reset to default	The button is used to set the intersection line by default (the horizontal line in the middle of the image)	
Clear	The button is used for removing the set intersection line	
Save	The button is used for saving the settings	
"Object" tab		
Undo changes	The button is used to return to the last saved settings	5.4.2
Reset to default	The button is used for setting object size by default	
Save	The button is used for saving the settings	

Table Appendix A.3:"Reports" tab

Name of the element	Element description	Description chapter
Annual report	The menu item allows the user to create annual report	5.5.1
Monthly report	The menu item allows the user to create a monthly report	
Daily report	The menu item allows the user to create a daily repor	

Create report	The menu item allows the user to create the report	

Table Appendix A.4:"Users" tab

Name of the element	Element description	Additional information	Description chapter
	The field contains the user name	Not editable	5.3
Current password	The field is used for changing the password; it is necessary to enter the current password	Editable, digits and Latin letters are allowed, case-insensitive	
Password	The field is used for changing the password; it is necessary to enter the new password	Editable, digits and Latin letters are allowed, case-insensitive	
Confirm password	The field is used for changing the password; it is necessary to enter the confirmation of the password given in "Password" field	Editable, digits and Latin letters are allowed, case-insensitive	
Save	The button is used for saving the changes	-	

Appendix B. Possible error codes in error_id field

The field error_id can take the values that are described in table Appendix B.1.

Table Appendix B.1: Error codes for error_id field

Name of the value	Value description
internal_server_error	Internal server error
incorrect_algo_line_format	Incorrect format of the intersection line algorithm data
incorrect_algo_points	Incorrect coordinate settings for intersection line points for the algorithm
incorrect_object_size_format	Incorrect object size format for the algorithm
incorrect_object_size	Incorrect object size setting for the algorithm
insufficient_user_rights	Insufficient user rights to perform the operation (the error occurs when administrator rights are needed, but the operation is performed in the "user" account)
not_logged_in	User account data is lacking
invalid_hostname	Incorrect hostname
invalid_device_date_time	Incorrect format of date or time
invalid_timezone	Incorrect time zone
invalid_ntp_server_address	Incorrect NTP server address
device_is_busy	The device is busy (the error occurs after report requirement, data export in xml or csv files, export of log-files, if one of the above operations is being performed)
session_failed	Session error (can occur if the session has expired in an authentication process; then the user should repeat the whole authentication procedure)
empty_username	The field "user name" is not filled in
empty_password	The field "password" is not filled in
wrong_password	Incorrect password
wrong_username	Incorrect user name
incorrect_device_ip_address	Invalid device IP address
incorrect_subnet_mask	Invalid subnet mask
incorrect_gateway	Invalid gateway address
incorrect_dns	Invalid DNS server address
incorrect_http_port_number	Invalid HTTP port number
incorrect_https_port_number	Invalid HTTPS port number
wrong_update_file	Incorrect update file
upload_error_file_too_large	Size of the uploaded file is too large
upload_error_partial	The file was partially uploaded
upload_error_no_file	The file was not uploaded
upload_error_prohibited_extension	File with this extension is prohibited for upload
private_password_send_failed	Private password sending failed
password_not_vaild	Invalid symbols in the password
incorrect_date_format	Invalid data format
incorrect_time_format	Invalid date format
incorrect_time_interval	Invalid time interval
incorrect_date_interval	Invalid date interval
incorrect_id_format	Invalid id format
incorrect_id_interval	Invalid format of id intervals
unknown_parameter_value	Unknown parameter value
required_parameter_not_given	Required parameter is not given

cannot_get_device_name	Device name is not obtained
cannot_get_serial	Device serial number is not obtained
cannot_get_last_startup_time	Last correct startup time is not obtained
cannot_restart_algorithms	Algorithm reset failure
incorrect_protocol	Invalid protocol
cannot_login_as_user_incomplete_recovery	Cannot log in to the "user" account, until recovery process is finished
incomplete_recovery	Cannot perform the operation until recovery process is finished
incorrect_device_name	Invalid device name
incorrect_current_password	Invalid current password
incorrect_device_name	Invalid device name
invalid_device_date_time_value	Invalid date and time value
incorrect_dhcp_switch_value	Invalid checkbox "dhcp_key" value
unable_to_downgrade	Downgrading of the previous firmware version failure
persistent_error_heavy_db	Number of events in the database is reaching its maximum. It is recommended to clear the database
persistent_error_full_db	Number of events in the database has exceeded its maximum. Stable operation is not guaranteed. It is recommended to clear the database as soon as possible