ACFA Intellect

# BioSmart UniPass Integration Module Settings Guide

Last update 19/03/2021

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# 1 BioSmart UniPass Settings Guide. List of terms

BioSmart UniPass controller is a device designed to work as part of a network access control and management system based on *BioSmart ACS* and *ACFA-Intellect* software.

BioSmart PV-WTC terminal is a device that combines the functions of a controller and a biometric reader, designed to work as part of a network access control and management system based on *BioSmart ACS* and *ACFA-Intellect* software.

*ACFA-Intellect* Server is a computer with the *ACFA-Intellect* software package installed and connected to the BioSmart UniPass controller.

Reader (control reader) is designed to connect to the BioSmart UniPass controller and is used to recognize users by the pattern of veins and capillaries on the palm. The reader can be used to read information from RFID cards as well.

Template is an image that contains biometric information about the location of veins and capillaries in the user's palm and used to identify him.

Biometric information (biometric data or biometrics) is a graphic representation of the pattern of veins and capillaries on the user's palm.

# 2 Introduction into BioSmart UniPass Settings Guide

**On the page:**



## 2.1 Purpose of the Document

The BioSmart UniPass Settings Guide is a reference and informational guide intended for BioSmart UniPass configuration specialists. This module is part of the ACFA-Intellect software package.

The guide provides:

1. General information about *BioSmart UniPass* integration module;
2. Configuring *BioSmart UniPass* module;
3. Working with *BioSmart UniPass* module;

## 2.2 General information on BioSmart UniPass integration module

The BioSmart UniPass module is a component of the ACS on the basis of the *ACFA-Intellect* software package and is designed to perform the following functions:

1. configuring the BioSmart UniPass controller and connected readers, as well as the BioSmart PV-WTC terminal;
2. ensuring interaction between *BioSmart UniPass ACS* and *ACFA-Intellect* software.

**Note.**

Detailed information about BioSmart devices is given in the official documentation (manufacturer is "Prosoft-Biometrics" company ).

Before configuring *BioSmart UniPass* integration module do the following:

1. install BioSmart hardware (see the official installation guide for BioSmart UniPass controller and BioSmart PV-WTC terminal);
2. connect *BioSmart UniPass ACS* to *ACFA-Intellect* Server.

# 3 Supported hardware and licensing of BioSmart UniPass integration module

| | |
|---|---|
| **Vendor** | LLC "Prosoft-Biometrics"<br>https://www.biosmart-tech.com/ |
| **Integration type** | Low-level protocol |
| **Equipment connection** | USB, Ethernet |

### Supported equipment

| Equipment | Function | Features |
|---|---|---|
| BioSmart UniPass/<br>BioSmart UniPass-EX | Standalone access controller | • Maximum number of users 1,000,000<br>• Maximum number of card codes 1,000,000<br>• Maximum number of palms 300,000<br>• Identification time by the veins of the palm (1: 1000) up to 2 s<br>• Interface for communication with a computer: USB 2.0, Ethernet, (IEEE 802.3, 10BASE-T, IEEE 802.3u, 100BASE-TX, 1000BASETX)<br>• Reader interface USB 2.0<br>• Number of readers up to 2<br>• Number of discrete inputs 6<br>• Support for verification modes "card + veins of the palm"<br>• Wiegand interface output<br>• Number of Wiegand outputs 2<br>• Simultaneous connection of up to two palm vein readers (BioSmart PV-WM or BioSmart PV-TS)<br>• Control of two locks or a turnstile |
| BioSmart PV-TS | Reader. Works in tandem with the BioSmart UniPass/BioSmart UniPass-EX access controllers | • Non-contact scanning<br>• Palm vein scanner optical, infrared<br>• Scanning distance 40-60 mm<br>• Built-in RFID card reader<br>• Card reading range Up to 100 mm<br>• Communication interface with controller USB 2.0<br>• Maximum length of USB cable 5 m<br>• Chassis intrusion detector.<br>• Built-in Mifare standard plastic card reader<br>• Built-in HID iClass, HID Prox card reader<br>• Built-in Legic card reader |

| | | |
|---|---|---|
| BioSmart PV-WM | Reader. Works in tandem with the BioSmart UniPass/BioSmart UniPass-EX access controllers | • Non-contact scanning<br>• Palm vein scanner optical, infrared<br>• Scanning distance 40-60 mm<br>• Built-in RFID card reader<br>• Card reading range Up to 100 mm<br>• Communication interface with controller USB 2.0<br>• Maximum length of USB cable 5 m<br>• Chassis intrusion detector.<br>• Palm veins are visible only in the IR spectrum<br>• Identification does not depend on dry / wet and dirty palms.<br>• Built-in Mifare standard plastic card reader<br>• Built-in HID iClass, HID Prox card reader<br>• Built-in Legic card reader |
| USB DCR-PV | Control reader | • Non-contact scanning<br>• Scanning distance 40-60 mm.<br>• Scan method Infrared<br>• Computer interface USB 2.0<br>• USB cable length 2 m<br>• High quality image of palm vein pattern<br>• Comfortable design for palm positioning<br>• Supports Windows XP, Vista, 7, 8, CE, Linux operating systems |
| BioSmart PV-WTC | Terminal | • Maximum number of users 1,000,000<br>• Maximum number of palms 300,000<br>• Time of identification (1: 1000) up to 2 sec.<br>• Probability of error FAR 0.00008%<br>• Maximum number of stored events 10,000,000<br>• Palm vein scanner Optical, infrared<br>• Built-in EM Marin card reader, frequency 125 kHz<br>• TFT screen 3.5 ”resolution 320x240<br>• Keyboard Touchscreen, 12 buttons<br>• WEB-interface for configuration<br>• Support for Biosmart relay control unit<br>• WIEGAND output 26-40 bits<br>• Computer interface Ethernet (IEEE 802.3, 10BASE-T, IEEE 802.3u, 100BASE-TX) |

**Module licensing**

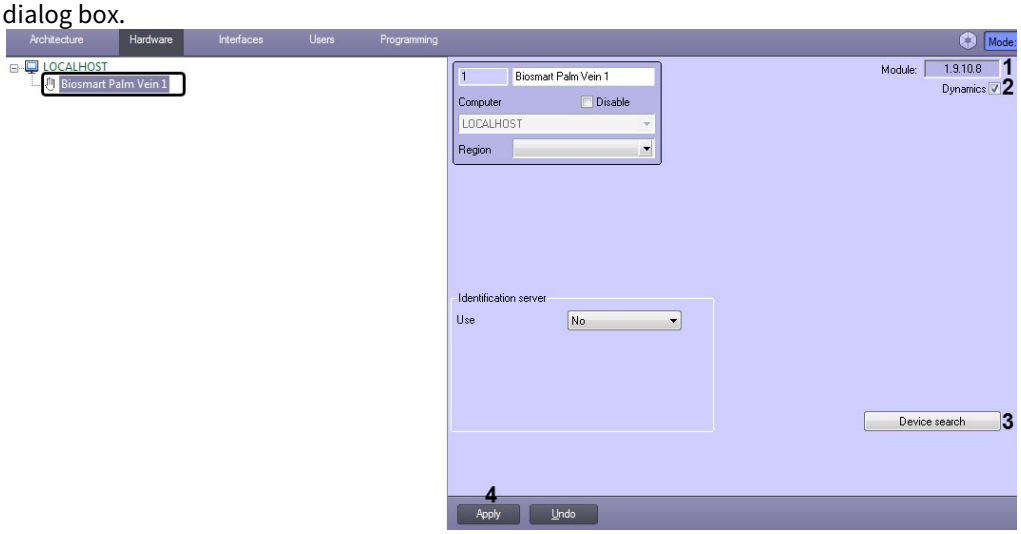
Per 1 controller / terminal.

# 4 Configuring BioSmart UniPass integration module

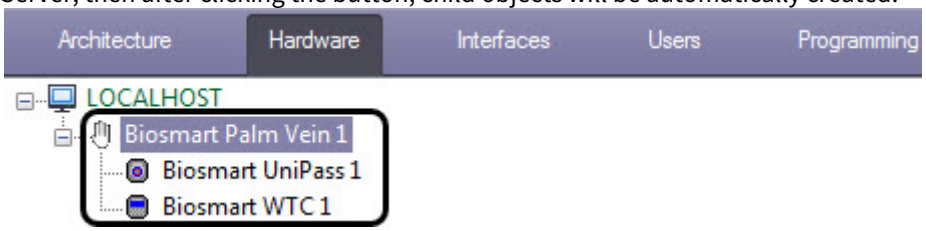
## 4.1 Creation and configuration of the Biosmart Palm Vein head object

The creation and configuration of the head Biosmart Palm Vein object in the *ACFA-Intellect* software package is carried out as follows:

1. Create the **Biosmart Palm Vein** object based on the **Computer** object on the **Hardware** tab of the **System Settings** dialog box.




   The current version of the BioSmart UniPass module is displayed in the settings panel of the head object (**1**).
2. Set the **Dynamics** checkbox to enable dynamic forwarding of *Access Manager* module data to all Biosmart UniPass controllers / terminals. This flag must be left on due to the correct work of the module (**2**).
3. Click the **Device search** button (**3**) to start automatic search. If the controller / terminal is connected to the *ACFA-Intellect* Server, then after clicking the button, child objects will be automatically created.




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

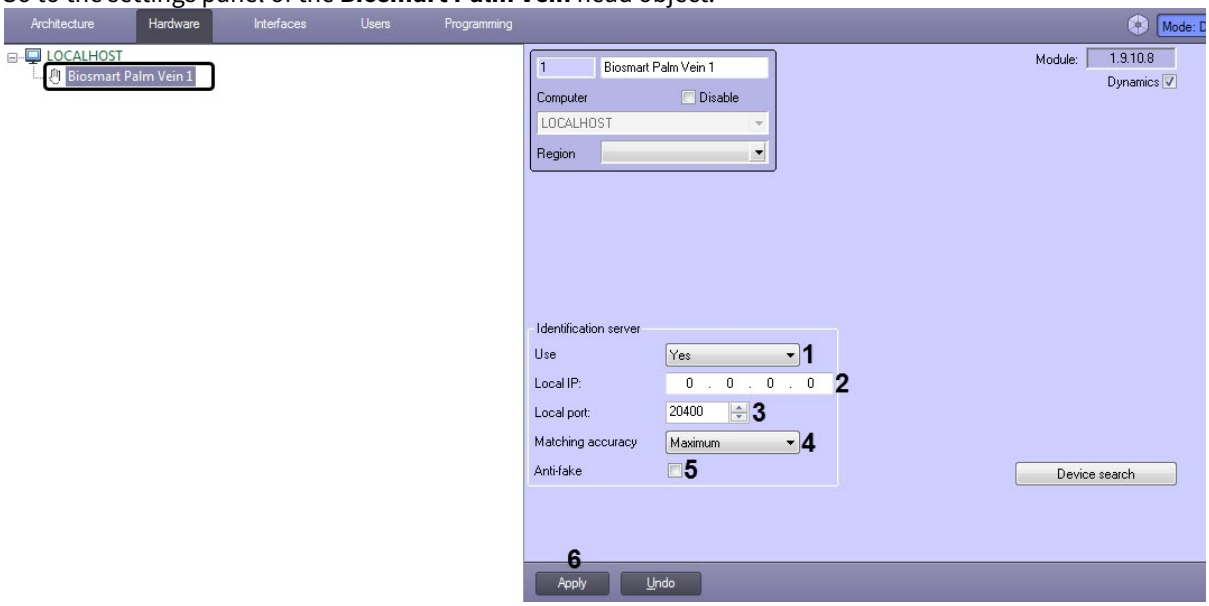
Creation and configuration of the Biosmart Palm Vein head object is completed.

## 4.2 Configuring Biometric Identification Server

Configuring a Biometric Identification Server is required if the controller / terminal is configured for the **Server identification** system mode (see Configuring BioSmart UniPass and Biosmart PV-WTC).

The Biometric Identification Server is set as follows:

1. Go to the settings panel of the **Biosmart Palm Vein** head object.




2. In the **Identification Server** group, select **Yes** from the **Use** drop-down list (**1**).
3. In the **Local IP** (**2**) field, enter the local IP address of the Biometric Identification Server.
4. In the **Local port** (**3**) field, select the local port number of the Biometric Identification Server.
5. From the **Matching accuracy** (**4**) drop-down list select the precision of matching.

> **Note**
>
> The higher the accuracy of the match, the longer it takes to check the matching of the palm pattern, but the safety is higher.

6. Set the **Anti-fake** checkbox (**5**) to enable protection of biometric readers from bringing objects other than the palm of the hand (so that the controller does not react, for example, on palm photo).
7. Click **Apply** to save changes (**4**).

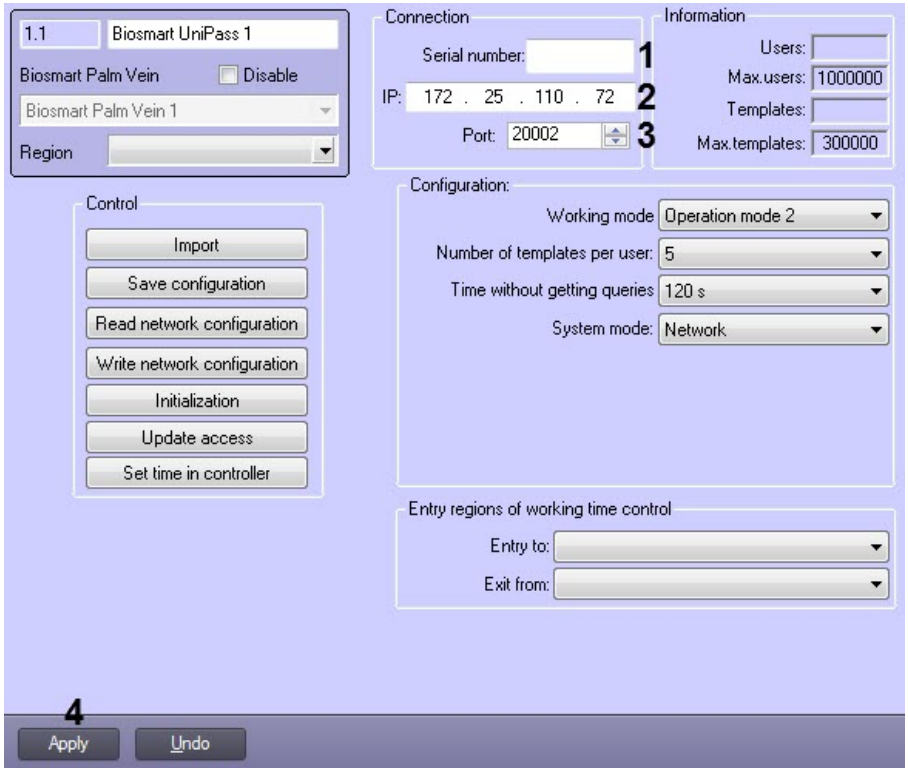
Configuring the Biometric Identification Server is completed.

## 4.3 Configuring BioSmart UniPass and Biosmart PV-WTC connection to ACFA-Intellect Server

If the object of the controller or  terminal is created automatically, the connection setup is not required. If object created manually, you must specify the settings for connecting to the ACFA-Intellect Server as follows:

> **Important!**
>
> These connection settings are ignored if the **Server identification** system mode is used, see Configuring BioSmart UniPass and Biosmart PV-WTC.

1. Go to the settings panel of the **Biosmart Unipass** or **Biosmart WTC** object, which is created on the basis of the **Biosmart Palm Vein.**




2. In the **Connection** section, specify the following settings:
    a. In the **Serial number** field, enter the factory serial number of the device (**1**). The serial number is the name of the device on the network as well.
    b. The **IP** field displays the device's IP address (**2**). Factory IP address is 172.25.110.72.
    c. In the **Port** list, select the port number for connecting the device to the computer (**3**). Port 20002 is used by default.
3. Click **Apply** (4).

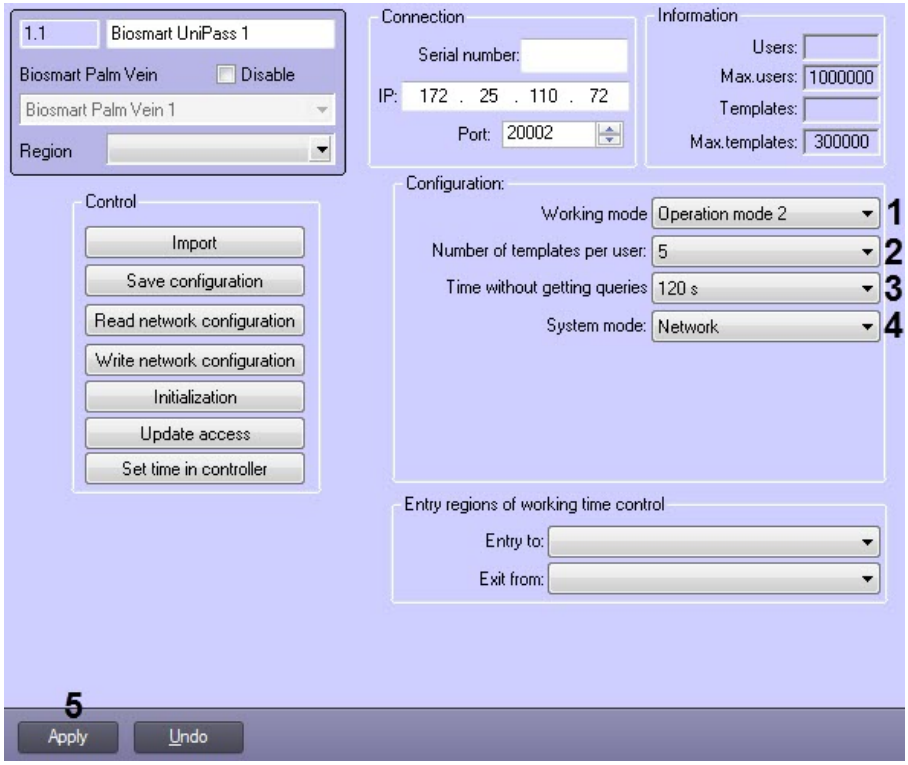
Configuring BioSmart UniPass and Biosmart PV-WTC connection to ACFA-Intellect Server

## 4.4 Configuring BioSmart UniPass and Biosmart PV-WTC

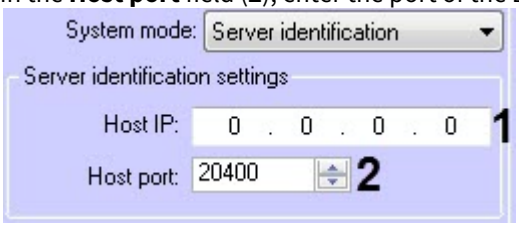
Configuring the BioSmart UniPass controller and the Biosmart PV-WTC terminal can be performed both automatic and manual creation.

For this do the following:

1. Go to the settings panel of the **Biosmart Unipass** or **Biosmart WTC** object, which is created on the basis of the **Biosmart Palm Vein.**




2. From the **Working Mode** drop-down list (**1**) select the controller / terminal operation mode, which corresponds to the serial number of the operation model in the web interface.
3. From the **Number of templates per user** drop-down list (**2**) select the number of possible patterns of the user's palm vein pattern. Up to 10 templates are available for each user.
4. From the **Time without getting queries** drop-down list (**3**) select the time period in seconds and if there are no requests from the server for this period, the connection with the server will be forcibly disconnected.
5. From the **System mode** drop-down list (**4**) select the system operation mode:
    a. **Network** - an operation mode in which access to the controller / terminal is assigned from the manufacturer's utility BioSmart Studio v5. Hand patterns are stored in the controller / terminal memory.
    b. **Local** - operating mode of BioSmart-WTC2 terminal which is not supported in the current version of integration. Differs from the **Network** operation mode by the database storage logic.
    c. **Server identification** - a mode of operation in which palm images are stored on an external biometric identification server instead of the controller or terminal local memory. In this mode, comparison of biometric data is performed on an external server, which allows you to expand the number of images and increase the speed of identification. The following parameters of the external Biometric Identification Server must be specified:
        i. In the **Host IP** field (**1**), enter the IP-address of the Biometric Identification Server.
        ii. In the **Host port** field (**2**), enter the port of the Biometric identification Server.




> **Important!**
>
> If the Server identification mode is used, then the Identification Server must be configured (see Configuring the Biometric Identification Server).

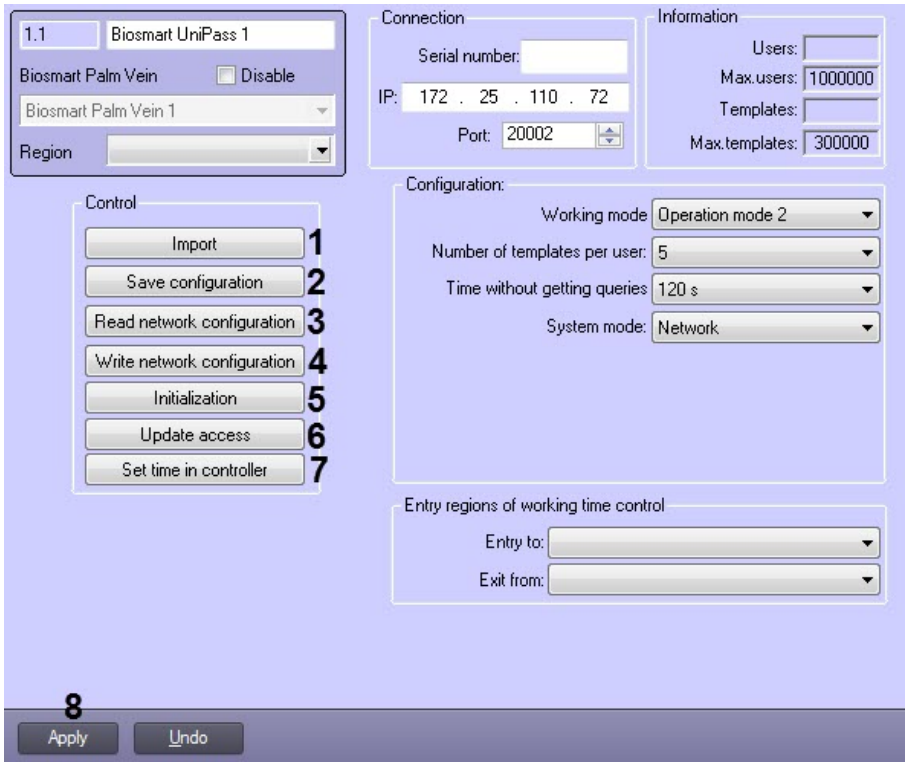
6. Click the **Save configuration** button to write the settings to the controller / terminal (see Biosmart Unipass and Biosmart PV-WTC configuration management).
7. Click **Apply** (**5**).

Configuring *BioSmart UniPass* and *Biosmart PV-WTC* is now complete.

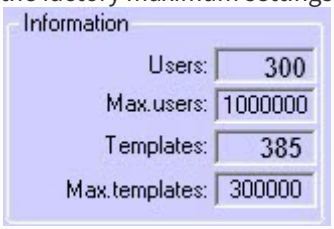
## 4.5 Biosmart Unipass and Biosmart PV-WTC configuration management

Configuration management of the BioSmart UniPass controller and the Biosmart PV-WTC terminal is carried out as follows:

1. Go to the settings panel of the **Biosmart Unipass** or **Biosmart WTC** object, which is created on the basis of the **Biosmart Palm Vein**




2. Press the **Import** button (**1**) to subtract configuration.

> **Note**
>
> After reading the configuration, the **Information** block on the settings panel will be filled. It is for reference only and shows how many users are allowed to enter and how many vein patterns are registered for them, as well as the factory maximum settings.
>
> 
> 

3. Click the **Save Configuration** button (**2**) to save the configuration changes to controller/terminal.
4. Click the **Read network configuration** button (**3**) to read the data of the network operating mode from the controller/terminal (see Configuring BioSmart UniPass and Biosmart PV-WTC).
5. Click the **Write network configuration** button (**4**) to write the system network operating mode changes to the controller/terminal (see Configuring BioSmart UniPass and Biosmart PV-WTC).
6. Click the **Initialization** button (**5**) to delete all user data, maps, palm vein patterns, and time zone data.
7. Click the **Update Access** button (**6**) to write access data to the controller / terminal.
8. Click the **Set time in controller** button (**7**) to synchronize the time of the controller / terminal and the ACF A-Intellect PC Server.
9. Click **Apply** to save changes (**8**).

*Biosmart Unipass and Biosmart PV-WTC configuration management completed.*

## 4.6 Configuring inputs, outputs and relays of BioSmart UniPass controller

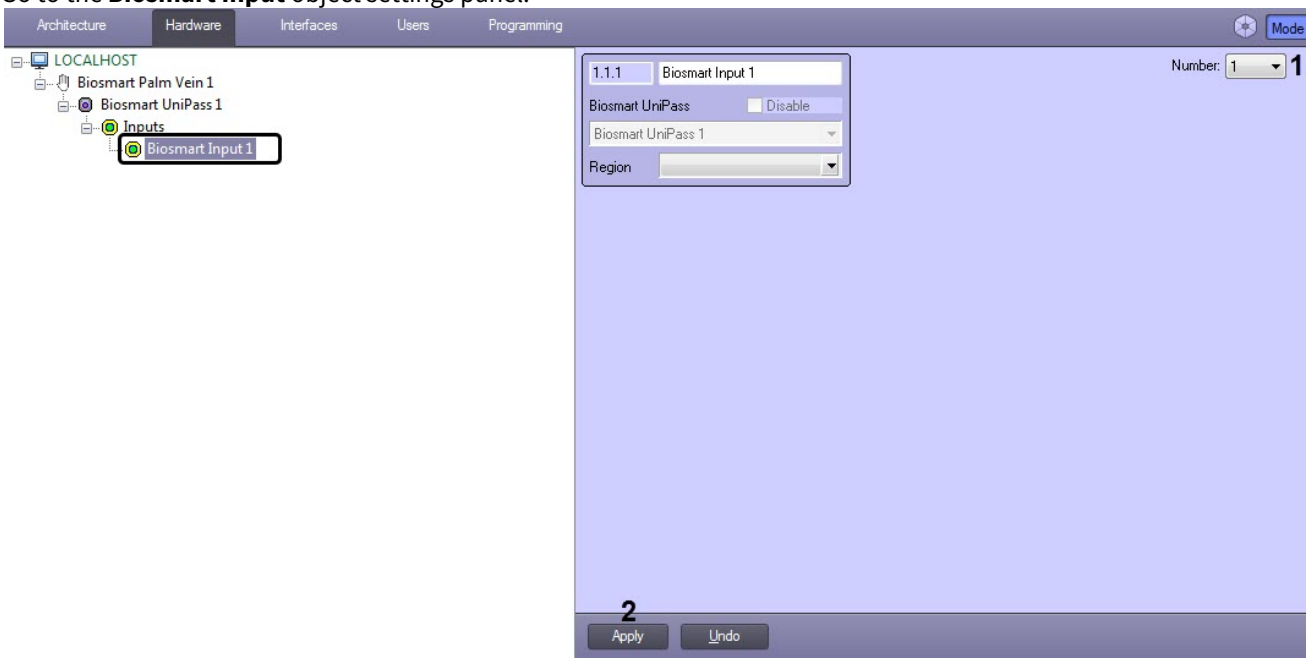
The inputs, outputs and relays of the BioSmart UniPass controller are represented by the **Biosmart Input, Biosmart Output** and **Biosmart Relay** objects, respectively. These objects can be created in the following ways:

- automatically from the settings of the head **Biosmart Palm Vein** object (see Creating and configuring the Biosmart Palm Vein head object);
- manually based on the head object **Biosmart UniPass**.

### 4.6.1 Configuring BioSmart UniPass controller input

The BioSmart UniPass controller input is configured as follows:

1. Go to the **Biosmart Input** object settings panel.



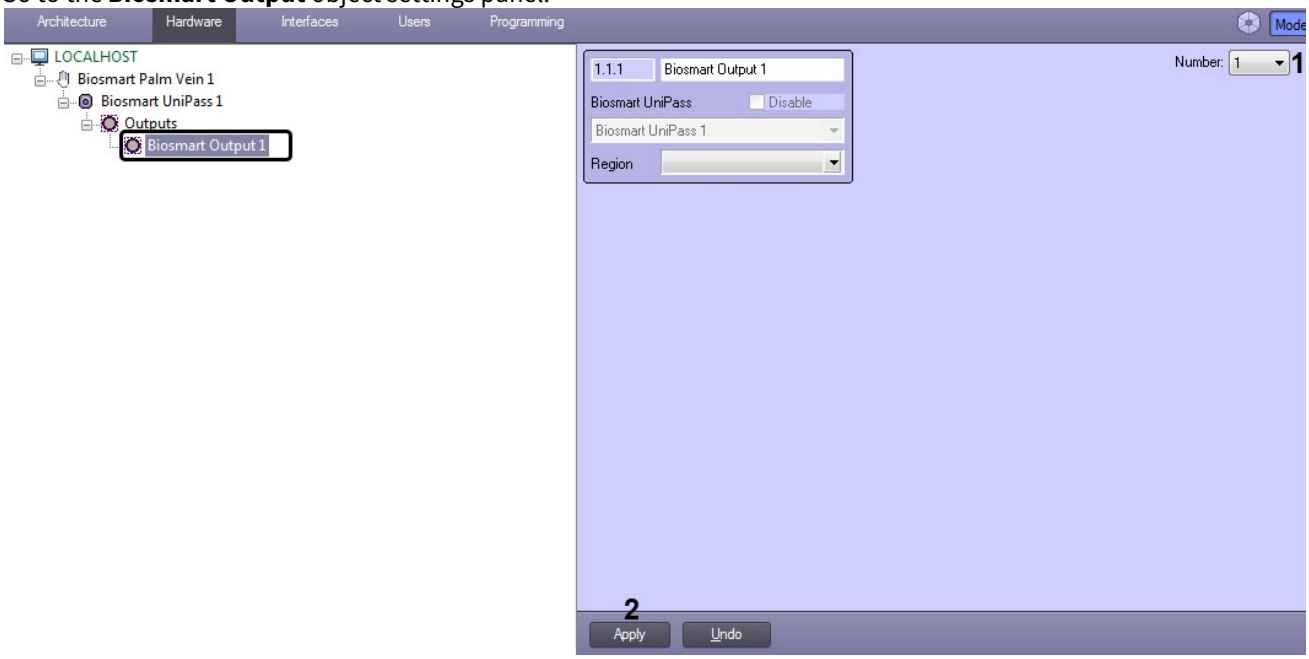

2. From the **Number** (**1**) drop-down list select the input number from 1 to 6.
3. Click **Apply** (2).

Configuring the BioSmart UniPass controller input is completed.

### 4.6.2 Configuring BioSmart UniPass controller output

The BioSmart UniPass controller output is configured as follows:

1. Go to the **Biosmart Output** object settings panel.



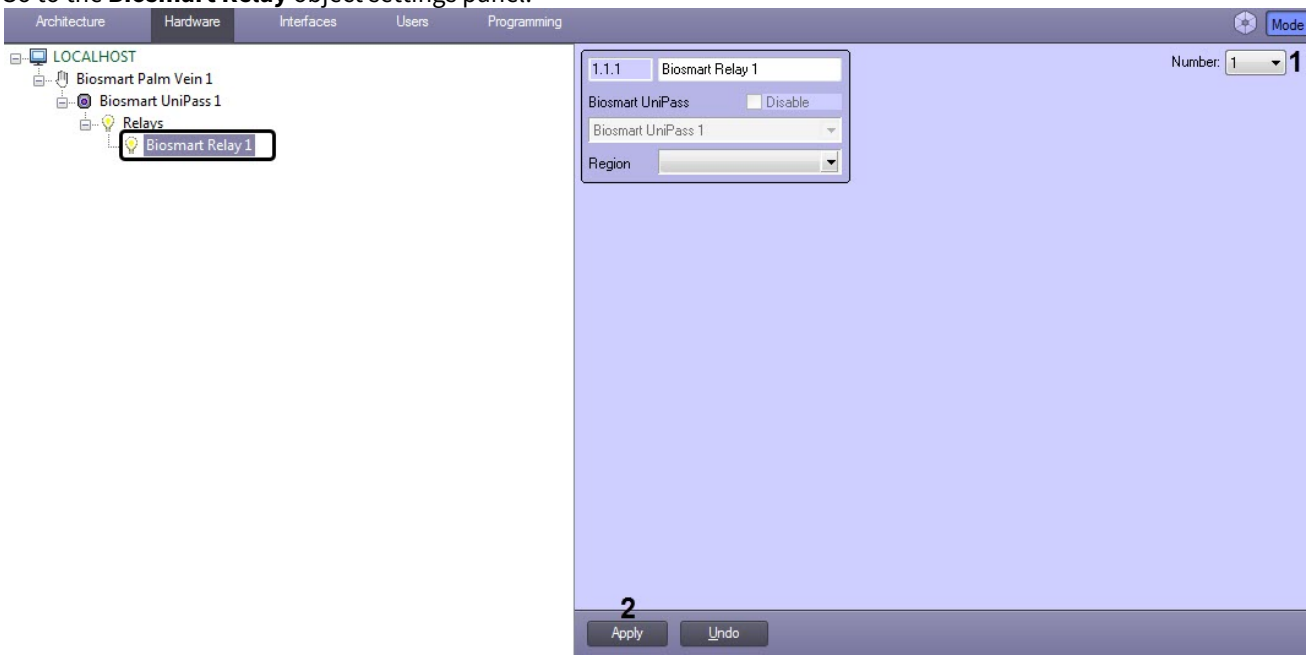

2. From the **Number** (**1**) drop-down list select the output number from 1 to 6.
3. Click **Apply** (2).

Configuring BioSmart UniPass controller output is completed.

## 4.6.3 Configuring BioSmart UniPass controller relay

The BioSmart UniPass controller relay is configured as follows:

1. Go to the **Biosmart Relay** object settings panel.



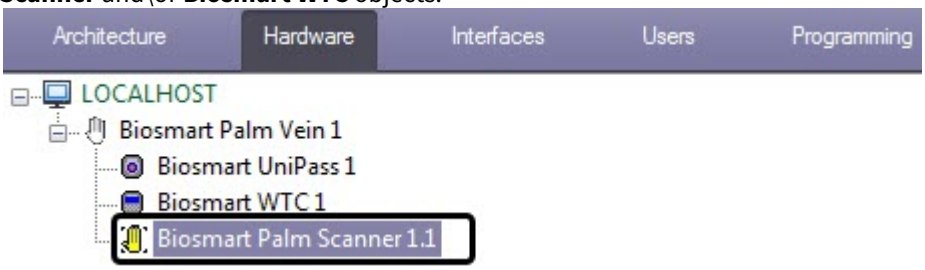

2. From the **Number** (**1**) drop-down list select the relay number from 1 to 2.
3. Click **Apply** (**2**).

Configuring BioSmart UniPass controller relay is completed.

## 4.7 Configuring interaction of BioSmart UniPass module with Access Manager and Time&Attendance modules

### 4.7.1 Interaction with the Access Manager module

The USB control reader DCR-PV, as well as the Biosmart PV-WTC terminal, can be used as control readers in the Access Manager **module** (see Configuring a control reader in the Access Manager). This requires to create the corresponding **Biosmart Palm Scanner** and\or **Biosmart WTC** objects.

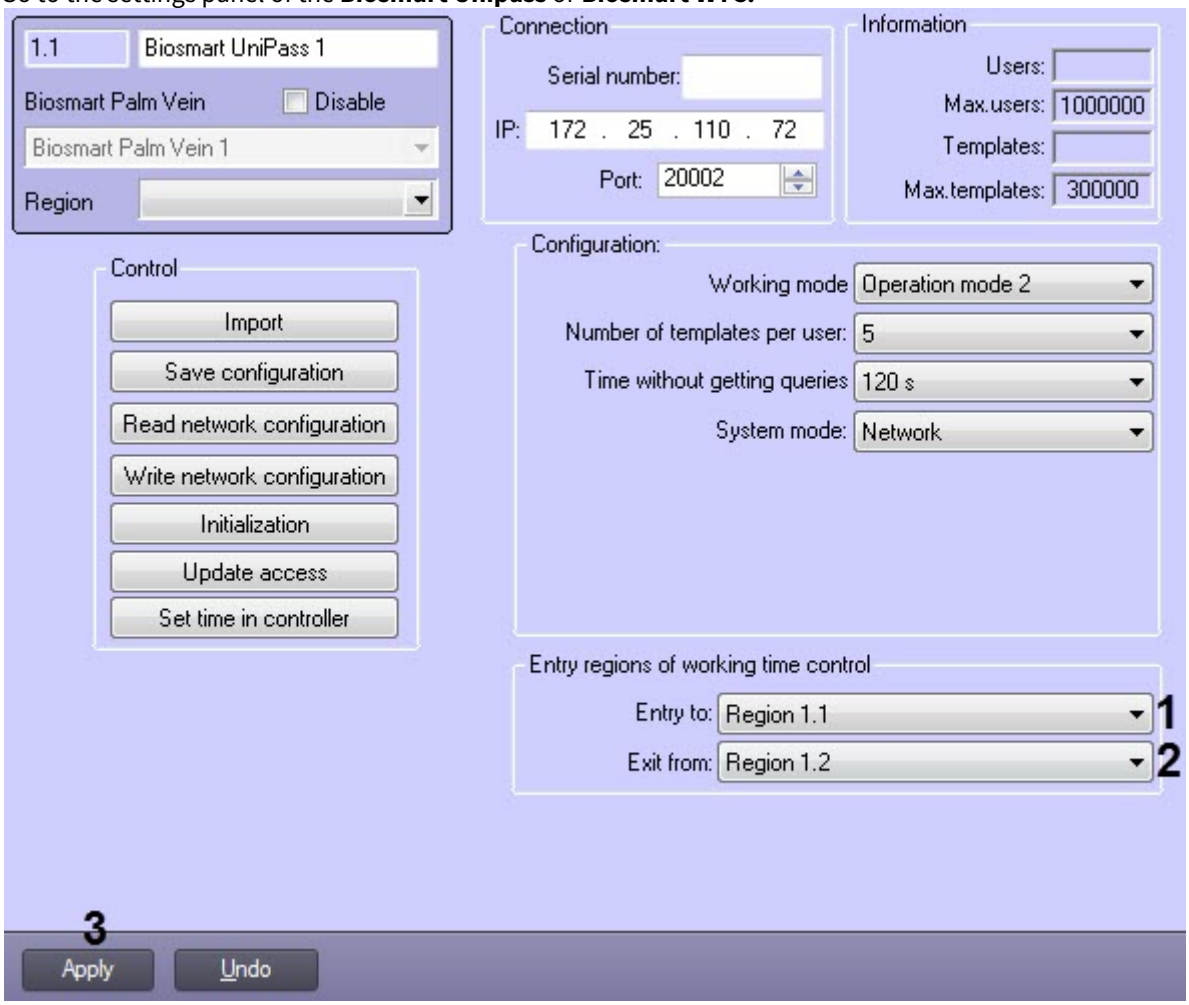



### 4.7.2 Interaction with the Time&Attendance module

The readers of the BioSmart UniPass controller can be used to record working time in the **Time&Attendance** module (see Time and Attendance Module Settings and Operation Guide).

For this do the following steps:

1. Go to the settings panel of the **Biosmart Unipass** or **Biosmart WTC.**



2. From the drop-down list **Entry to** (**1**) select the region corresponding to the area located at the side of exit.
3. From the **Exit from** (**2**) drop-down list, select the Region corresponding to the area located at the side of entrance.
4. Click **Apply** (**3**).

Configuring interaction of **BioSmart UniPass** with **Access Manager** and **Time&Attendance** modules is completed.

# 5 Operating the BioSmart UniPass integration module

## 5.1 General information on BioSmart UniPass integration module operation

The following interface objects are used to work with the BioSmart UniPass module:

1. **Map**;
2. **Event Viewer.**

Operation of these interface objects is described in the Intellect Administrator's Guide.

Operation of these interface objects is described in the Intellect Operator's Guide.

## 5.2 Adding biometric parameters BioSmart UniPass

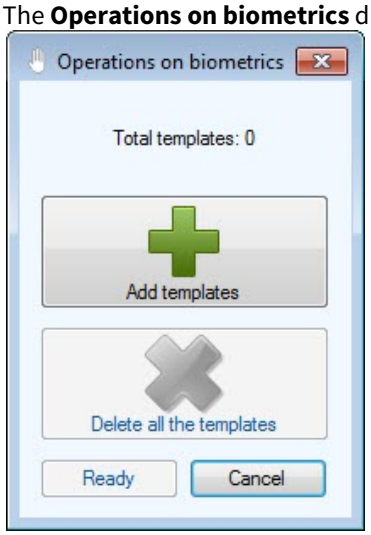
Biometric parameters can be added to the Access Manager module from the DCR-PV reader and the Biosmart PV-WTC terminal.

Before start, you need to configure the interaction of the DCR-PV USB control reader connected to the BioSmart UniPass controller, as well as the Biosmart PV-WTC terminal with the Access Manager module (see Configuring interaction of BioSmart UniPass module with Access Manager and Time&Attendance modules).

### 5.2.1 Adding biometric parameters using the Biosmart PV-WTC terminal

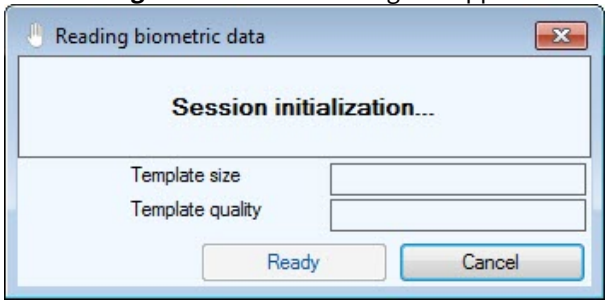
To add biometric parameters follow these steps:

1. Go to adding biometric data in the Access Manager window (see Adding biometric parameters).
2. Select the appropriate extension: **(Biosmart Palm Vein) Biosmart WTC.**
3. The **Operations on biometrics** dialog box appears. Click **Add templates**

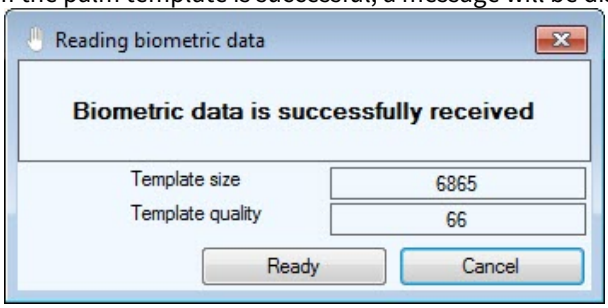



> **Note**
>
> The **Delete all the templates** button removes all palm templates.

4. The **Reading biometric data** dialog box appears. Follow the instructions on the terminal screen.



5. If the palm template is successful, a message will be displayed.

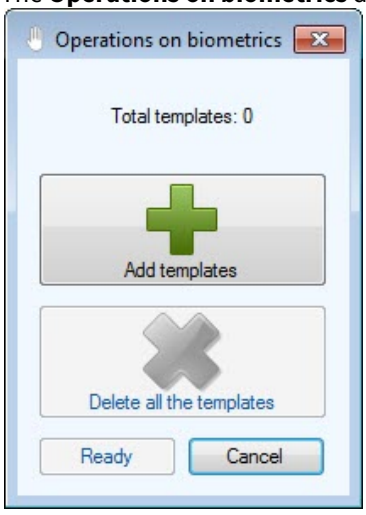



6. Click **Apply** to save the template.
7. You can add as many templates as the terminal configuration allows (see Configuring BioSmart UniPass and Biosmart PV-WTC). The **Operations on biometrics** window displays the number of saved templates.

## 5.2.2 Adding biometric parameters using the DCR-PV USB control reader

To add biometric parameters follow these steps:

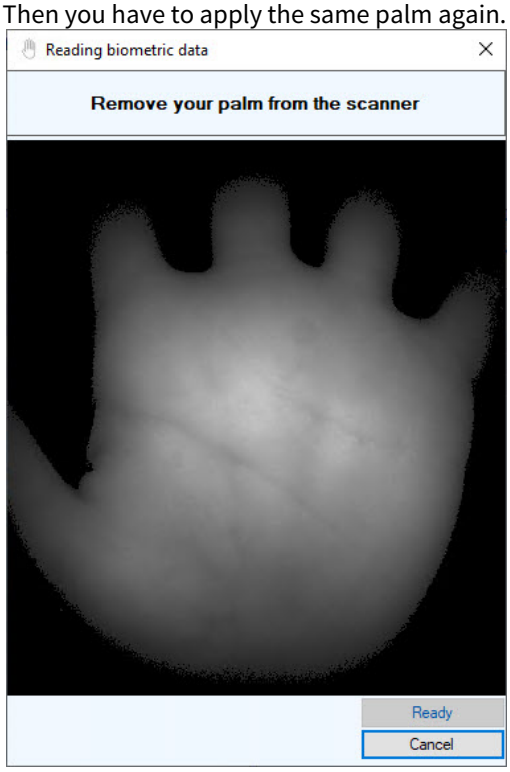
1. Go to adding biometric data in the **Access Manager** window (see Adding biometric parameters).
2. Select the appropriate extension: **(Biosmart Palm Vein) Biosmart Palm Scanner** (reader DCR-PV).
3. The **Operations on biometrics** dialog box appears. Click **Add templates**



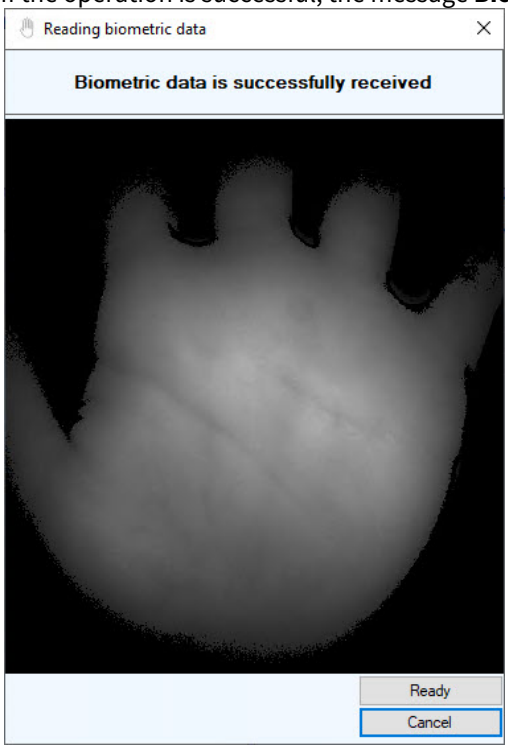

> **Note**
>
> The **Delete all the templates** button removes all palm templates.

4. The **Reading biometric data** dialog box appears. Next step is to put your palm to the reader.


5. Then you have to apply the same palm again.



6. If the operation is successful, the message **Biometric data is successfully received** will appear.

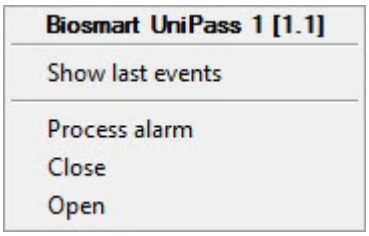



7. Click **Apply** to save the template.

The addition of biometric parameters from the DCR-PV and the Biosmart PV-WTC is completed.

## 5.3 BioSmart UniPass controller management

Controlling the *BioSmart UniPass* object is performed in the **Map** interface window with the **BioSmart UniPass** object functional menu.




> **Note**
>
> To open the functional menu of an object, right-click on the object's icon.

The **BioSmart UniPass** object functional menu commands are given in the table.

| Menu command | Function |
|---|---|
| Process alarm | Alarm handling by Operator |
| Close | Close the access point |
| Open | Open an access point |

The following controller states are possible:

| | |
|---|---|
| Biosmart UniPass 1 [1.1]  | No communication with the controller |
| Biosmart UniPass 1 [1.1]  | Communicating with the controller |
| Biosmart UniPass 1 [1.1]  | Controller on-line |

## 5.4 Biosmart PV-WTC terminal management

Controlling the *Biosmart PV-WTC* terminal is performed in the Map interface window with the **Biosmart WTC** object functional menu.

> **Note**
>
> To open the functional menu of an object, right-click on the object's icon.

The **Biosmart WTC** object functional menu commands are given in the table.

| Menu command | Function |
|---|---|
| Open | Open an access point |
| Close | Close the access point |

The following terminal states are possible:

| | |
|---|---|
| Biosmart WTC 1 [1.1]  | No communication with the controller |
| Biosmart WTC 1 [1.1]  | Controller on-line |

## 5.5 Controlling inputs, outputs and relays of BioSmart UniPass controller

The inputs, outputs and relays of the BioSmart UniPass controller are not controlled in the interactive **Map** window.

The following input states are possible:

| | |
|---|---|
| Biosmart Input 1 [1.1.1]  | Activated |
| Biosmart Input 1 [1.1.1]  | Deactivated |

The following output states are possible:

| | |
|---|---|
| Biosmart Output 1 [1.1.1]  | Activated |
| Biosmart Output 1 [1.1.1]  | Deactivated |

The following relay states are possible:

| | |
|---|---|
| Biosmart Relay 1 [1.1.1]  | On |
| Biosmart Relay 1 [1.1.1]  | Off |