

BIXICON III

USER GUIDE

1.3.2024

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1 COMPARISON BETWEEN BIXICON III AND BIXICON II

	BixiCon III	Previous version
Size	92mm x 60mm x 31mm	88mm x 86mm x 31mm
Accessories	Integrated Wi-Fi configuration	External configuration dongle
	Integrated Wi-Fi connectivity + external antenna	External Wi-Fi dongle + antenna
	Integrated LTE connectivity + external antenna	External LTE
System	Higher processor performance → faster system start-up	
	Consumption 0.1-3.8 W	Consumption 0.2 - 4 W
	Rescue mode: re-installation SW, default config reset, factory reset	
	Clearer and more responsive interface	
	Easier access to the configuration mode	
		External modem support (USB stick)
Storage	SD card up to 128 GB	SD card up to 64GB
	SSD disk connected via USB	
Other features	Automatic change of summer / winter time	
	Monitoring coming soon - notifications, statistics, graphs, logs.	

2 TECHNICAL PARAMETERS

Brand	BIXION (www.bixion.com)
Model	BixiCon III
Power supply	8–24 V
Power consumption	0,1W – sleep mode 1,5W – running mode 3,8W – when LTE modem connected, uploading files
Dimensions	92mm x 60mm x 31mm
Weight	162g
Default IP (LAN)	192.168.1.111
Communication interface	Ethernet, LTE (GSM), WIFI
Operation temperature *	between -30 °C to 70 °C

* The temperature sensor is inside the aluminium body. So, the shown temperature is affected also by the heat of the BixiCon intervalometer. This temperature should be maximally 90 - 95 °C and during the hot days this temperature could be between 50 – 65 °C.

2.1 CONSUMPTION EXAMPLES

In the following figure, you can see that power consumption of the unit is highly dependent on the power consumption of the camera especially in powersave mode. Therefore, in powersave mode it is necessary to set sleeping mode on the camera properly.

The consumption was measured under ideal conditions (temperature, humidity, steady LTE or Wi-Fi signal)

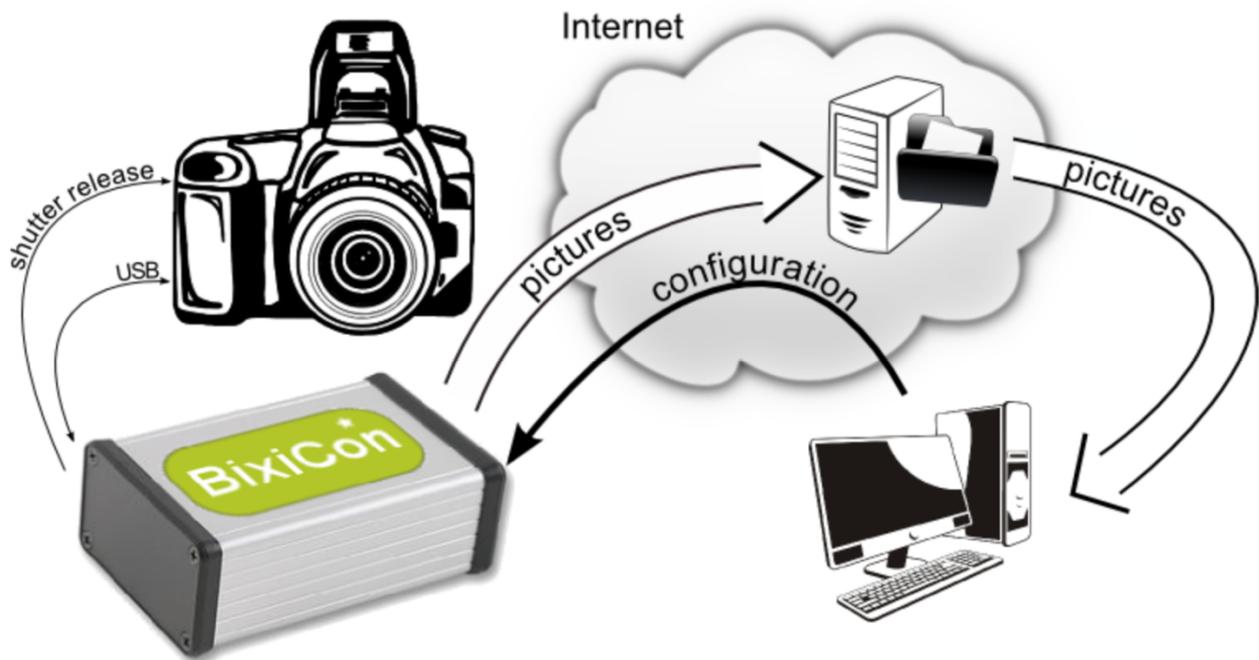
	interval	period	mode	local storage	remote storage	camera sleep	connection	consumption		
								shooting	sleeping	total per 24h (W)
1	10 minutes	10h per day	PS - upload 4x	save all	upload all to BixionDrive	through the night (after 15 minutes)	LAN/WiFi	15 W	2 W	17
1.1	10 minutes	10h per day	PS - upload 10x	save all	upload all to BixionDrive	through the night (after 15 minutes)	WiFi	17 W	2 W	19
1.2	10 minutes	10h per day	PS - upload 4x	save all	upload all to BixionDrive	(after 1 minute)	LAN	3 W	2 W	5
1.3	10 minutes	10h per day	PS - upload 4x	save all	upload all to BixionDrive	(after 1 minute)	LTE	3 W	2 W	5
2	10 minutes	10h per day	PS - upload 4x	save all	upload all to BixionDrive	through the night (after 15 minutes)	LTE	16 W	2 W	18
4	10 minutes	10h per day	normal	save all	upload all to BixionDrive	through the night (after 15 minutes)	LTE	32 W	24 W	56
5	10 minutes	10h per day	normal	save all	upload all to BixionDrive	through the night (after 15 minutes)	LAN	30 W	24 W	54
5.1	1 minutes	10h per day	normal	save all	upload all to BixionDrive	through the night (after 15 minutes)	LAN	28 W	24 W	52
5.2	5 minutes	10h per day	normal	save all	upload all to BixionDrive	power off between shots	LTE	26W	24 W	48

3 DESCRIPTION

BixiCon (BIXION Controller) is a programmable intervalometer with special features. It is able to trigger a camera, get the pictures from it and upload them to network storage. The main features are:

- A programmable intervalometer capable of taking pictures within less than a minute after another for each day of a week.
- Various storage options: BIXION Drive, FTP, Google Drive, Dropbox.
- Common DSLR and point-and-shoot cameras support.
- Low power sleep mode (suitable for solar and battery power).
- Ethernet, WIFI or LTE internet connection.
- POE power supply (DC 8 - 24V).
- Shutter release or USB trigger.
- Local storage and fail-safe reupload in case of connection loss.
- Uploading pictures on the background while shooting.
- Voltage monitoring suitable for solar powering.
- Internal and meteorological sensors (temperature, humidity).
- Built-in power output for the camera.

4 HOW IT WORKS



BixiCon unit provides a better overview of your time-lapse photo sets. The unit is able to operate in two basic modes described in the following chapters.

4.1 POWER-SAVE MODE

In this mode, the unit is sleeping most of the time and therefore, has minimum power consumption. Depending on the schedule, it turns on in order to take or upload photos. When uploading is activated, the unit turns a 3G modem on to get internet connection and starts uploading pictures. If the previous uploading was interrupted, it will try to reupload again. It is suitable for e.g. solar / battery powered stations.

When sleeping, the unit is not available for management via the web interface (because it is actually turned off in sleep mode). However, the configuration settings can be changed online. Every time the unit turns on and connects to the internet, it goes through the website looking for new settings. If it finds any, it is automatically downloaded and then applied.

4.2 NORMAL MODE

In this mode, the unit is still running. It's connected to the internet permanently and the pictures are uploaded to the internet storage right after each shot. Real-time configuration is available every time the unit is turned on and connected to the internet.

5 BOOTING AND CONFIGURATION

The booting process is indicated by the green LED light. It takes approximately 30 seconds. The end of booting is indicated by two short beep sounds. Then, the green LED starts to blink for 10 seconds. In this moment, the buttons are activated, waiting for the user input:

- Press and hold the **reset** button for 3 seconds. The orange LED starts blinking. Release the button. The orange LED is on. The green LED is on. After a while, the green LED starts blinking. This action activates the **configuration mode** (see below).

If no button is pressed, the unit goes into the operational mode (normal or powersave). In the normal mode, the green LED signalizes that the unit is turned on. In the powersave mode, both LEDs are off to reduce power consumption.

It is also possible to access the configuration mode during the unit run. In normal mode, just press and hold the reset button for 3 seconds. The unit beeps and green LED starts blink. In powersave mode just press and hold both buttons (set and reset button) approximately for 3 secs. The both LEDs turn on and the unit is going to start in configuration mode. It takes approximately 30 seconds.

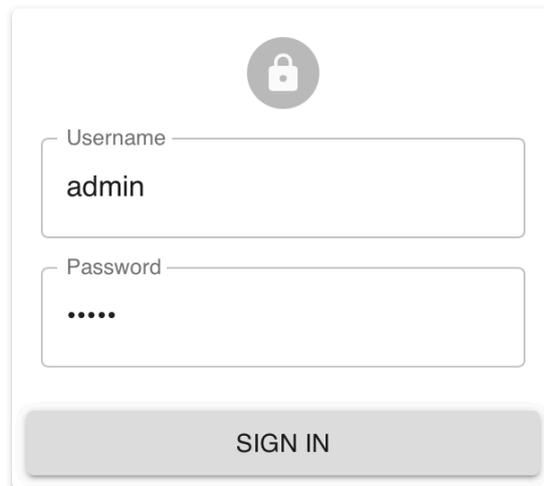
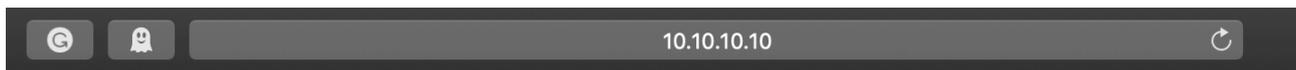
Configuration mode allows the user to change the configuration of the unit via the web interface. In this mode, ethernet connection is activated. The unit is accessible via IP address. You can activate the configuration in the booting process, or it can be activated anytime by pressing and holding the reset button for at least 3 seconds. The unit beeps and the green LED starts blinking. The configuration mode is activated. To quit the configuration mode, you must restart the unit (manually) or use the reset button again.

6 THE FIRST START

There are two ways of accessing the BixiCon unit.

- Every unit has a built-in configuration modem. In the configuration mode, the unit is accessible via a WIFI access point named "BIXICON-serial" where serial is the serial number of the unit. You can get connected with your laptop or even with a smartphone or tablet. In this case, the unit's IP address is 10.10.10.10 - put these numbers into your browser's address bar to get access.
- Plug the ethernet cable from your computer and power source cable in. After booting sound signal, switch the unit into the configuration mode (see the previous chapter). The IP address of the computer should be set within the same network range (e.g. 192.168.1.20, netmask 255.255.255.0). By default, the unit has a static IP address 192.168.1.111.

Open your web browser and type 192.168.1.111 (respectively 10.10.10.10) to the address bar. Now you should see the configuration website of the unit. Default login is **admin**, password **admin**.

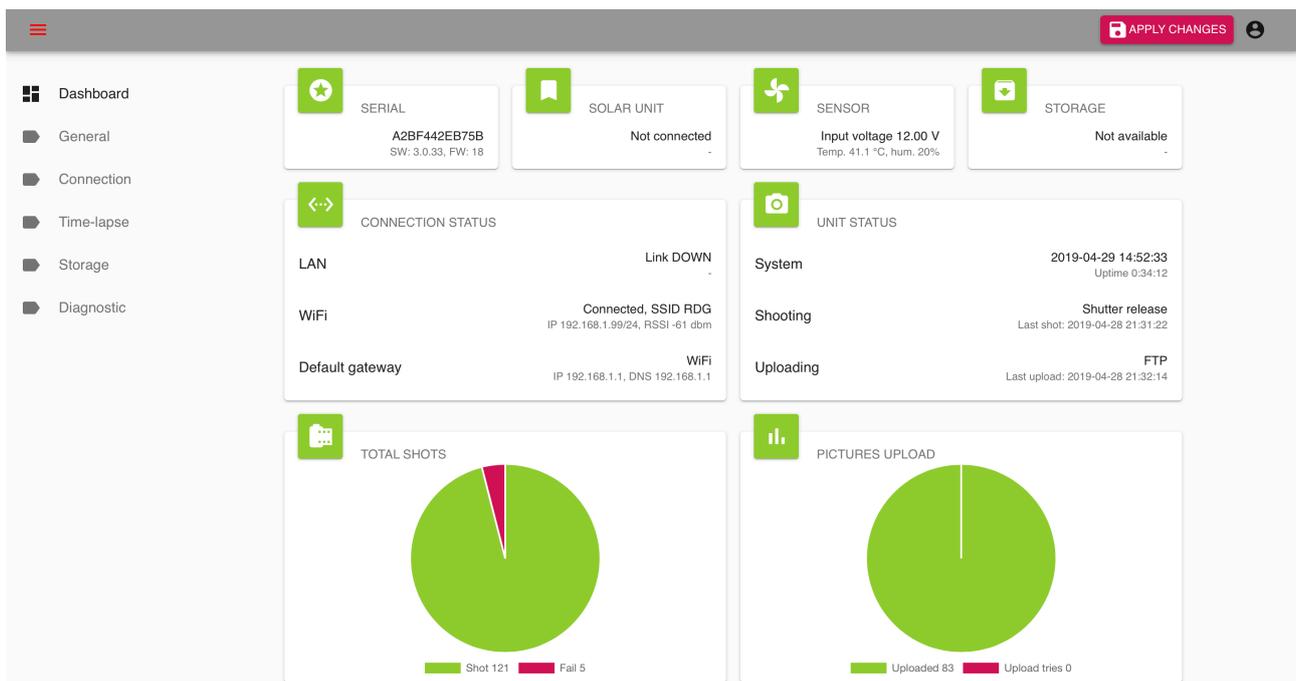
A screenshot of a login form on a web page. At the top center is a grey padlock icon. Below it are two input fields. The first is labeled "Username" and contains the text "admin". The second is labeled "Password" and contains six dots. Below the input fields is a grey button with the text "SIGN IN" in white capital letters.

7 CONFIGURATION

The unit can be configured via our own web interface. The website is responsive and can be loaded on various devices with different screen resolutions.

7.1 UNIT OVERVIEW

The first page of the user interface is dashboard, where you can easily see basic information of the unit. Also, you can find other useful information here and check the process of your time-lapse project.



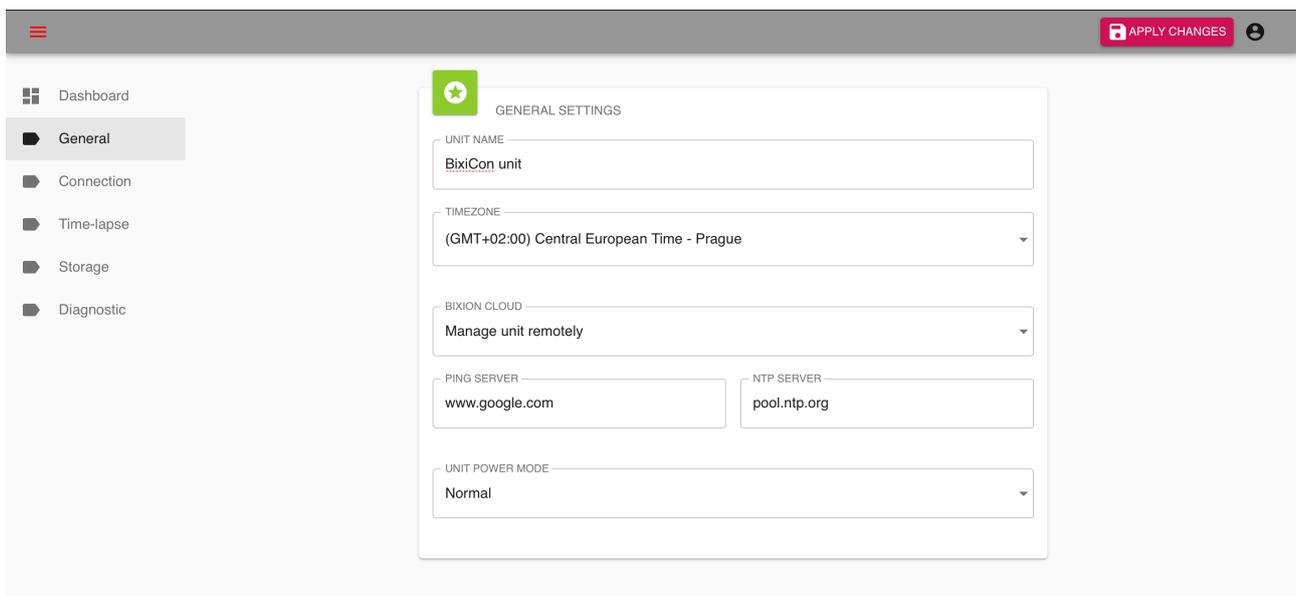
On the status page, you can see the information that will tell you whether your unit is working properly or not.

1. Serial shows information about the unit - the serial number and installed software.
2. Solar unit shows BIXION charger information.
3. Sensor gives you unit information.
4. Storage shows information about the connected local storage. The local storage is necessary for other features.
 - Save all pictures.
 - Fail-save backup.
5. Connection status shows the internet connection status.
6. Unit status gives you information about the time-lapse process.
 - System shows the actual time on the unit and uptime.
 - Shooting shows the shutter method and the time of the last taken picture.
 - Uploading shows the type of the remote storage and time of the last uploaded picture.

7. Total shots and pictures upload show complex information on time-lapse.
 - Total shots -> shot – the number of successful shots.
 - Total shots -> fail – the number of failed shots.
 - Pictures uploaded -> uploaded – the number of successfully uploaded files.
- Pictures uploaded -> upload tries – the number of unsuccessful uploads (including attempts for reupload).
 - Pictures uploaded -> uploaded – the number of successfully uploaded files.
 - Pictures uploaded -> upload tries – the number of unsuccessful uploads (including attempts for reupload).

7.2 BASE UNIT SETTINGS

The base settings include the unit name and the time zone of the unit's location. The name is user's identification of the unit. Daylight saving time is involved in the time zone settings. That can cause changing of light conditions due to the time difference. Unit power mode selection is described in the following chapter.



The screenshot shows a web interface with a sidebar menu on the left containing 'Dashboard', 'General', 'Connection', 'Time-lapse', 'Storage', and 'Diagnostic'. The 'General' section is selected. The main content area is titled 'GENERAL SETTINGS' and contains the following fields:

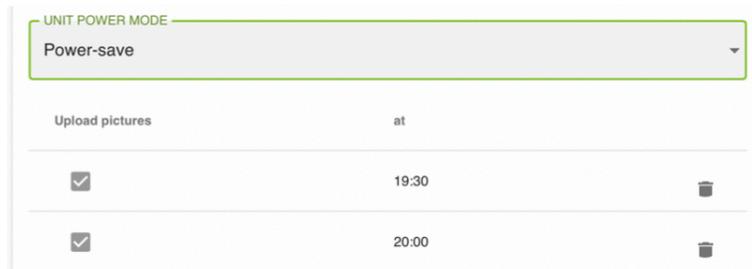
- UNIT NAME:** BixiCon unit
- TIMEZONE:** (GMT+02:00) Central European Time - Prague
- BIXION CLOUD:** Manage unit remotely
- PING SERVER:** www.google.com
- NTP SERVER:** pool.ntp.org
- UNIT POWER MODE:** Normal

An 'APPLY CHANGES' button is visible in the top right corner of the interface.

BIXION cloud option allows the unit to communicate with BIXION servers and enables online services (remote management, unit monitoring etc.). **Ping server** identifies local or global servers, depending on the availability, for the unit to test its online status. For local network with no access to the internet, it is possible to use the name of the local server and its IP address. When the unit gets the internet access, it is recommended to test connection availability using a public server.

7.3 UNIT POWER MODES

The unit power mode (normal or powersave) can be set with the button **Unit power mode** according to the description in [chapter 3](#). When in normal mode, the unit is permanently connected to the internet. When it comes to powersave mode, the unit is periodically connecting to the configuration website (see the remote management in [chapter 7](#)).



UNIT POWER MODE		
Power-save		
Upload pictures	at	
<input checked="" type="checkbox"/>	19:30	
<input checked="" type="checkbox"/>	20:00	

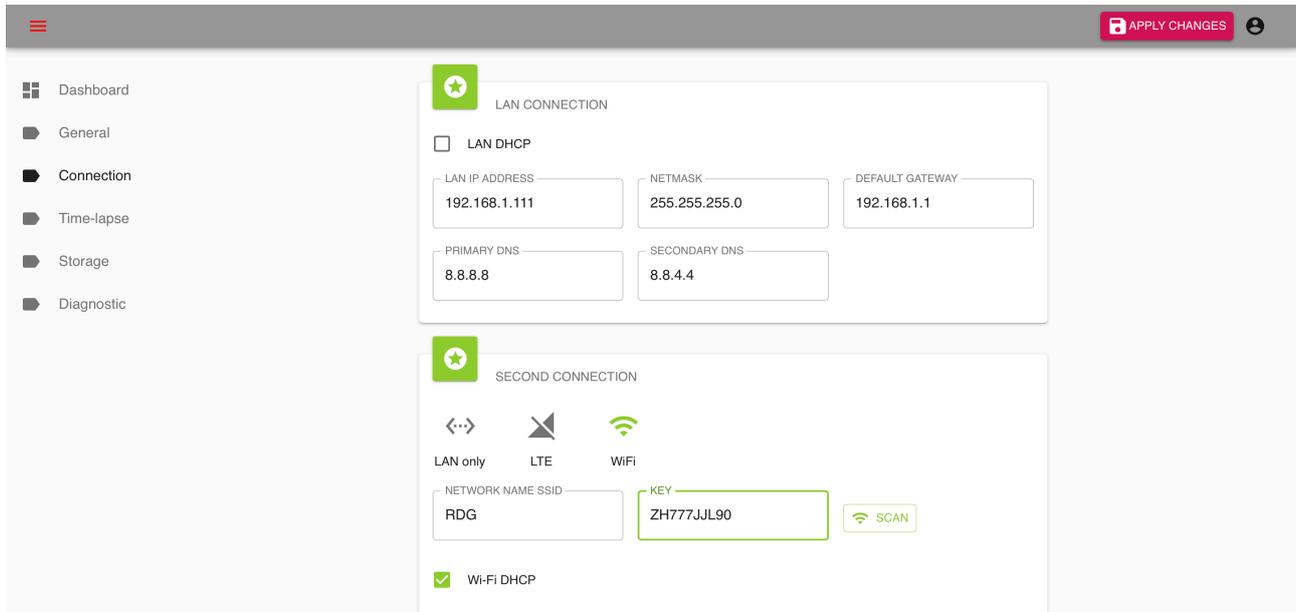
In normal mode, no special settings are required. In powersave mode, it is possible to set different times in which the unit is turning on and check the configuration on the server, as well as to pictures.

Tick the upload picture checkbox if uploading is required at this particular time. If you do not do it, the unit only checks the website and applies configuration update if available. Afterwards the unit goes to sleep again.

Warning: It is allowed to add maximal 64 records of powersave's actualization time and shooting intervals together.

7.4 INTERNET CONNECTION

The unit has a built-in LTE and WIFI modem. You can select the preferred internet connection – LAN, LTE or WIFI. Unit can be connected to LAN and WIFI or LTE simultaneously. Please, be aware that LTE or WIFI connection has a higher priority than LAN connection, so pictures will be uploaded via WIFI or LTE connection even if the LAN is configured and a cable is connected.



You can see the status of internet connections on the dashboard.



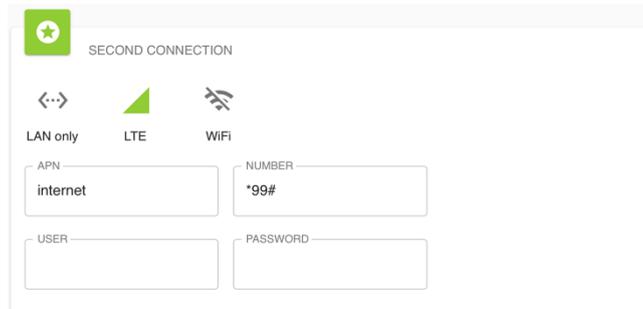
LAN

The unit supports both DHCP and a static IP address. Tick the DHCP checkbox for dynamic host IP configuration.

LTE

For LTE configuration, you need to know your APN and number from your GSM provider. Without this information, the connection will not be successful. It is necessary to accept these changes by clicking on the **Apply changes** button.

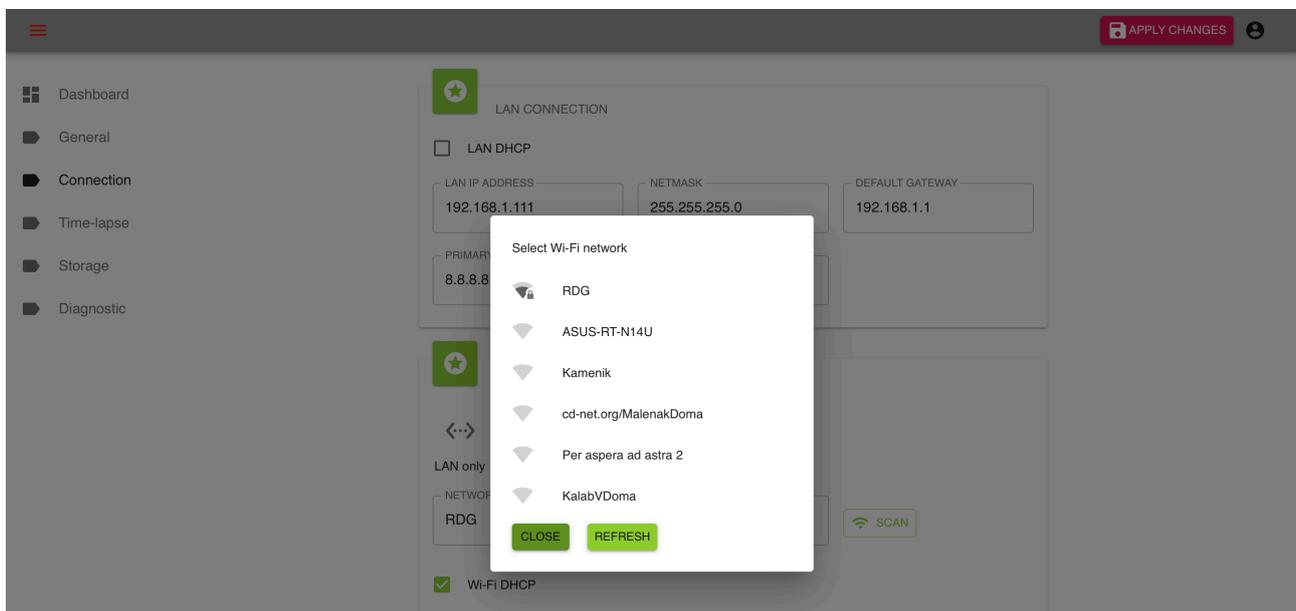
- Access point name (APN) is the name of the gateway among GPRS, 3G or 4G mobile. Ask your GSM provider for the correct APN. You can also find it on the internet (e.g. <http://www.vysoo.com/apn.php>).
- Number is the dial number. Mostly set to *99# or *99****1# if not, ask your GSM provider.
- User and password can be left blank, in most cases.



Warning: PIN protection of the SIM card must be turned off.

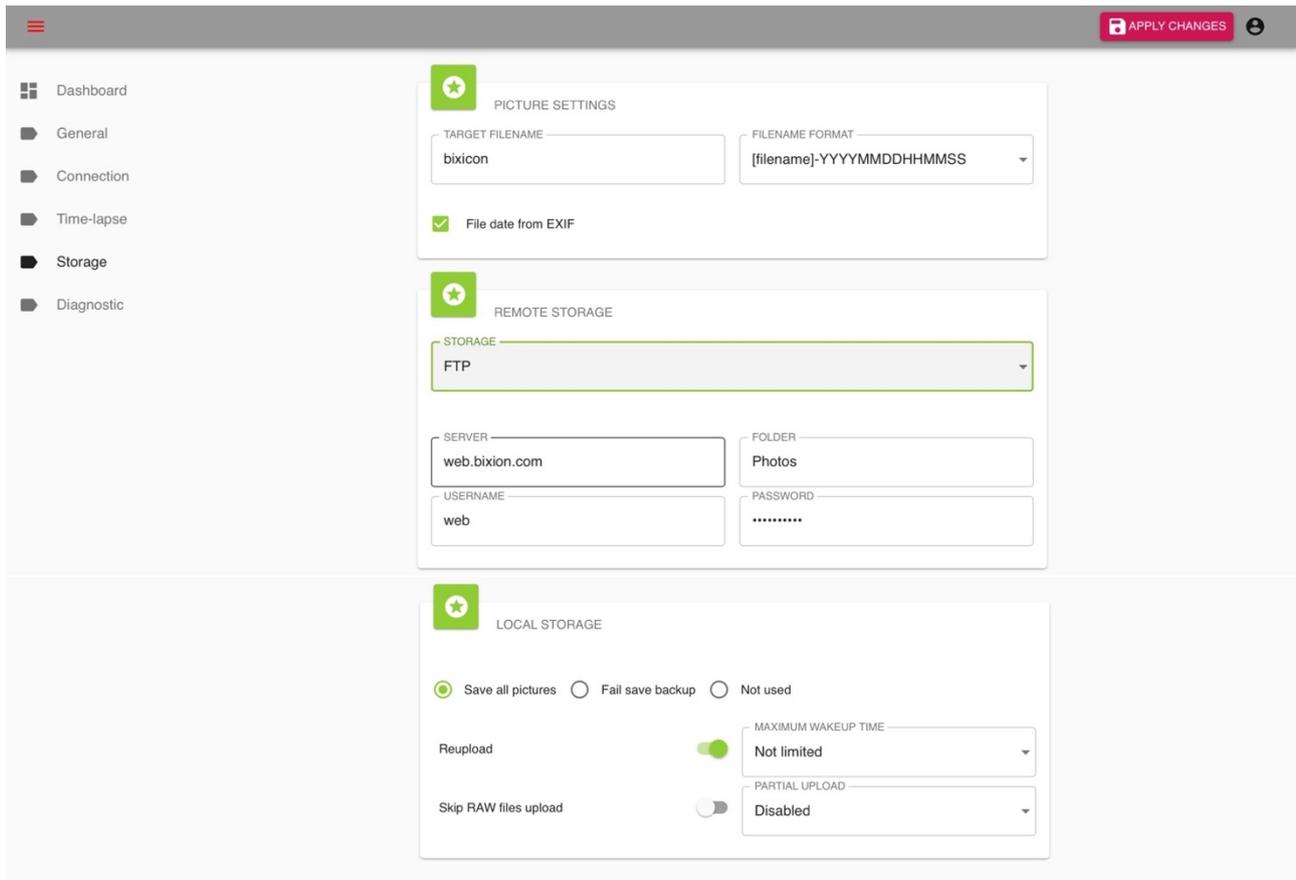
WIFI

For WIFI connection, it is necessary to know SSID and password of the wireless network. With SSID you can find the list of the nearest WIFI sites through the scan button. Choose your network name and set its password.



7.5 STORAGE

In the storage section, you can choose the way and place of storing your pictures. You can set the base name of the picture, as well as the format. If you want to use the camera time (written in EXIF information of the pictures) check **File date from EXIF**. Otherwise, the BixiCon unit is able to count the time of the picture automatically. The correct time is counted from camera and unit time.



The taken pictures can be sent to one internet storage or saved to local storage. If you want to use the local storage, you have to put an SD card to the unit or connect it to an SSD Disk via micro USB - USB OTG cable. On your SD card, you can save all pictures or use it only as fail-save backup. The system support SD cards up to 128 GB.

Recommendation: It is recommended to use local storage to save all pictures instead of the camera SD card due to possible communication problems with the camera in case there is a lot of saved pictures.

The pictures can also be uploaded to internet storage where you can easily work with them. The BixiCon unit offers four options where the photos can be stored.

Warning: If you use format only with a *[filename]* one picture is still rewriting.

BIXION Drive

In order to use this storage, it is required to order BIXION cloud service. Everything comes together with Time-lapse browser. Contact us for more information.

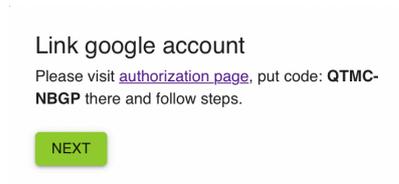
FTP

Configuration of the FTP storage is easy. Just enter the URL of your FTP server, the folder where you want to upload pictures and credentials. That's it.

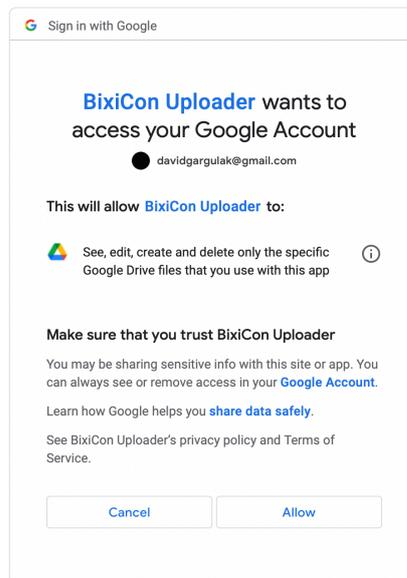
Google Drive

To set up Google drive storage, you must have access to Gmail account..

- On the unit choose Google Drive storage.
- Click on the Link Account button.
- Copy the code and click on authorization page link.



- Put the code here and follow the steps.
- Login to you Google account
- Now you can see that BixiCon Uploader wants to access to your Google Account. Please check it and click on Allow.



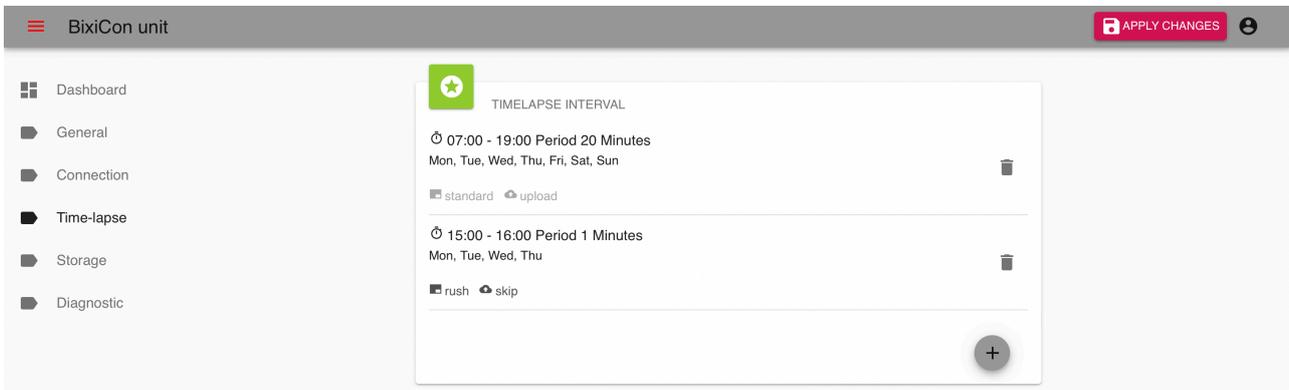
- Please, go back to the BixiCon configuration page and click on Next.
- Finally the Google Drive is connected with your BixiCon unit. Click on Close.
- Click Apply Changes on the BixiCon unit.

Dropbox

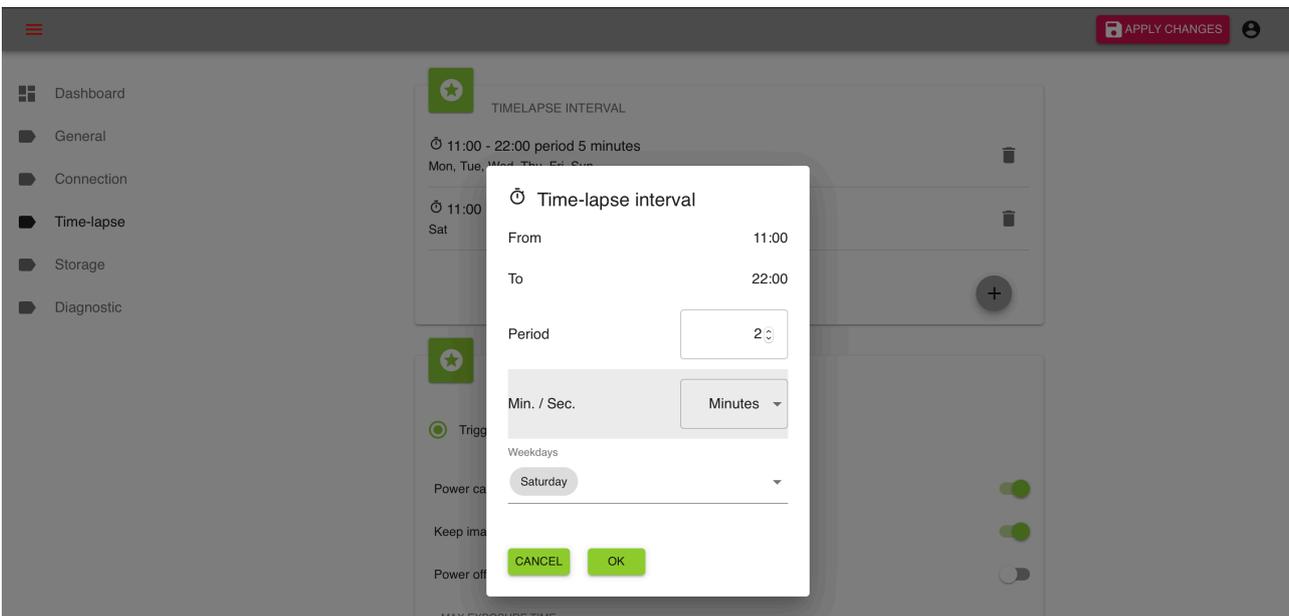
- Sign into your Dropbox account.
- Create your Dropbox App on <http://www.dropbox.com/developers/apps/create>
- Choose Dropbox API.
- Choose App folder access.
- Name your app.
- Click on Create App.
- On BixiCon unit, set Dropbox as your storage and copy:
 - App folder to Folder field
- Click on the Link Account button and copy the credentials that have been created
 - App key to Client ID
 - App Secret to Client secret
- Click on next. Click to the link to redirect to Dropbox. Click on Allow and copy the key to BixiCon unit Authorization code, then click to next.
- Your unit is now connected to Dropbox.
- Save and reboot the unit.

8 TIME-LAPSE INTERVALS

The time-lapse intervals can be set easily through a simple form where you can choose the interval, period and days on which this interval is active. It is possible to set additional params to intervals like rush interval and choose if the interval will be uploaded or not.



To add a new interval, click on the plus button. Then the dialog window for entering interval parameters will be displayed. If you want to edit an interval that already exists, just click on it.

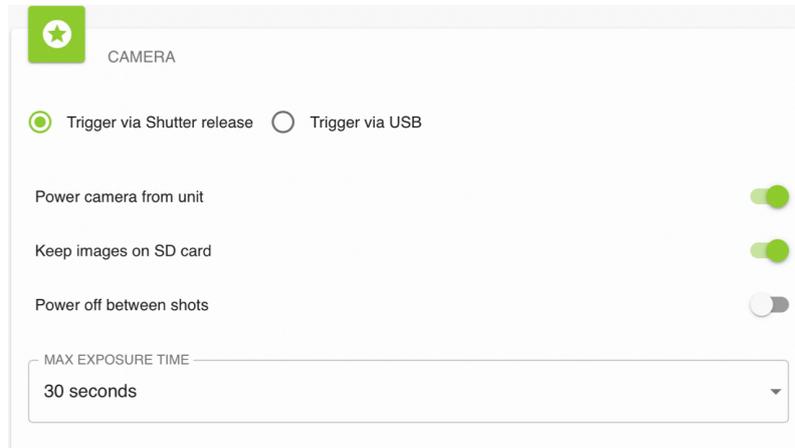


Recommendation: It is strongly recommended to use intervals shorter than 60 seconds with the unit in a powersave mode. Or at least verify that the camera is able to shoot at these intervals in normal mode.

Warning: It is allowed to add maximal 64 records of powersave's actualization time and shooting intervals together.

9 CAMERA SETTINGS

The unit supports two types of camera triggers – shutter release cable and USB. The USB trigger is available in normal operational mode only. To connect shutter release, it is necessary to have an appropriate cable.



If the **Keep images** checkbox is ticked, pictures are stored on the camera's SD card. Otherwise, the pictures get deleted immediately after being downloaded from the camera.

Recommendation: It is recommended to save photos only on the unit's local storage. A large number of pictures saved on the camera's SD card can cause problems with communication between the camera and the unit.

Recommendation: It is strongly recommended to use SSD disk or USB stick as a local storage than common SD card. The common SD cards could have limited service life.

The **Powered from unit** option can be used if the camera is powered straight from the unit's power source. If the camera is frozen or blocked and does not communicate at all, the unit can restart the camera and then it tries to detect it again.

The unit also offers the possibility to change some of the camera's properties.



Clicking on the Load camera parameters button reloads the camera's properties. If it is changeable, a list of choices will appear as well. The Save camera parameters button applies the settings to the camera. The result can be immediately shown if you do a shot test and download the picture.

Warning: The parameters can be deleted when the camera is turned off.

10 SPECIFIC FEATURE

The BixiCon is equipped with several distinctive features designed to enhance your user experience and provide added convenience. Familiarizing yourself with these features will enable you to maximize the capabilities of your unit.

10.1 REMOTE CAMERA FOCUS

The remote focus is one of that features that allows you to set camera focus remotely. This functionality is primarily compatible with Canon EOS and Nikon D series cameras.

Recommendation: It is highly recommended to conduct a comprehensive test to confirm that everything operates as intended.

CAMERA SETTING

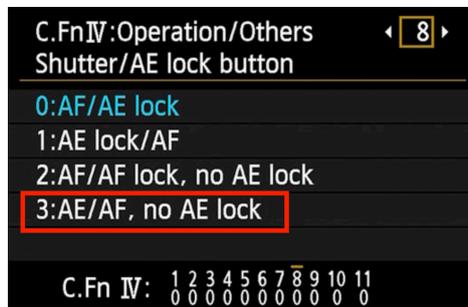
For optimal functionality of this feature, it is essential to configure the camera with the following settings:

- Set camera to auto focus
- Lock auto focus to prohibit focusing before every shoot

E.G. with Canon EOS 2000D you can do following:

- On the lens set auto focus and also on the camera if needed
- In camera's menu go to custom function -> "shutter / AE lock" and set "AE/AF no AE lock"

AE / AF no AE lock



It is still possible to focus via custom button

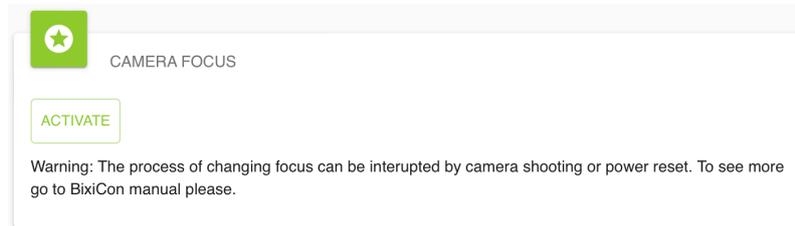


Warning: The autofocus must be set together with AF lock, otherwise the picture would be refocused before every shot.

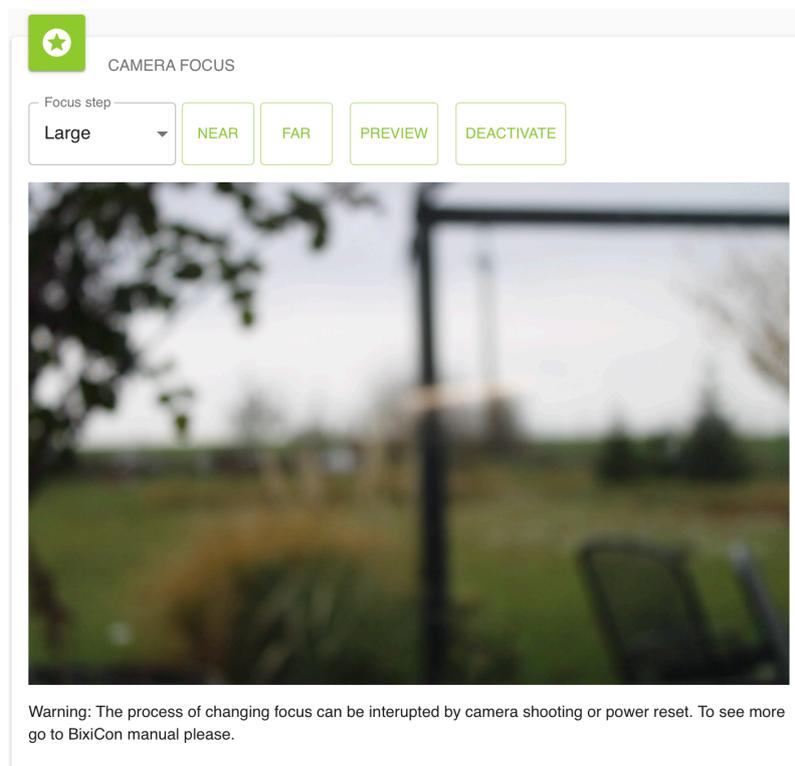
Focus

When the prerequisites are set, we can use fully protentional of the BixiCon unit and set focus remotely.

1. Click Activate to open mirror in the camera. Now it will be possible to change camera focus.



2. Now you can choose step (Large, Medium, Small) and then move lens near of far.

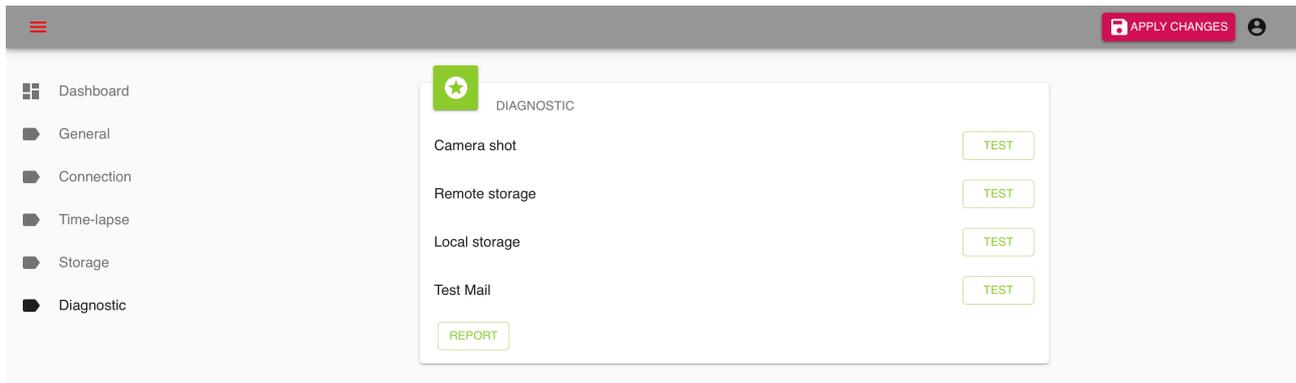


3. Click Preview to see actual image
4. When you finish, just click Deactivate. The mirror will be returned to the right position.

Warning: The camera focus mode could be interrupted by shooting or a BixiCon restart. Therefore, it is advisable to adjust the shooting interval and switch the unit to normal mode. If the mode is interrupted nevertheless, click to deactivate and then click again to activate.

11 DIAGNOSTIC

On the Diagnostics tab, there are also tests related to the current configuration of the unit. Here, it is possible to check the internet connection, access to FTP, storage etc. If any test fails, click the REPORT button and you can get more information on the reason why the test was not successful.



12 UNITS MANAGEMENT (BIXION BOARD)

There is a special website meant for controlling your units remotely. In your web browser, head to <https://board.bixon.com> and fill out the login form. If you do not have your login and password yet, please send a request to info@bixon.com

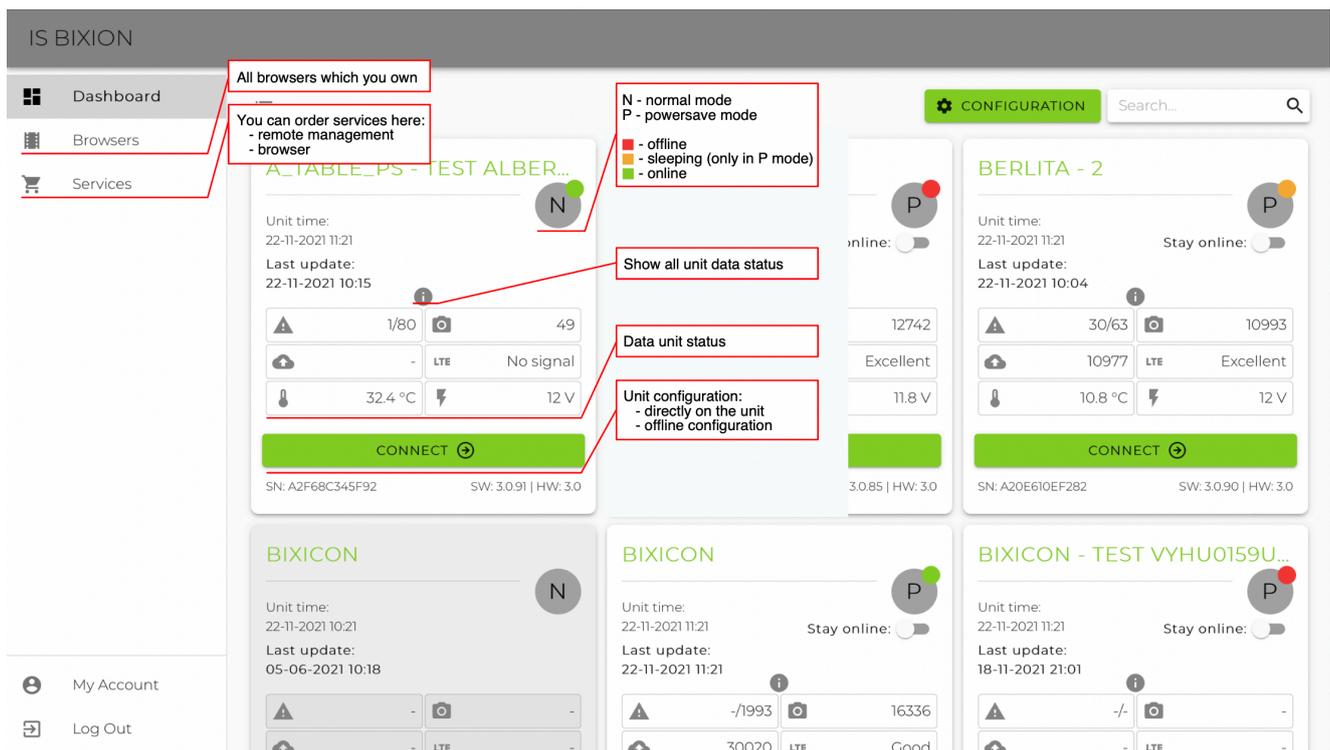
IS BIXION

USERNAME

PASSWORD

REMEMBER ME LOG IN

After login, you can see the units that can be controlled remotely.



In the dashboard you can manage and control all units. All info data are actualized automatically and also it is possible to change unit configuration or manage services like browser or remote management.

yxvb

12.1 SERVICES

Now we offer two additional services which can help you with your projects. First service is called Remote management and it is useful for easier management of your units. Second service helps you with online presenting your work and it is called Browser.

Remote management

This service allows you to change BixiCon units remotely and also provides you more information about units run. You can see following information:

- Number of taken picture	 1332	 1332
- Number of upload tries	 25/1	 03:26
- Signal quality	 39.3 °C	 12.1 V
- Storage capacity	 8 %	 1 %
- Temperature	 Good	
- Humidity		
- Input voltage		
- Fails shot / Fails uploaded		
- Unit uptime		

Remote connection to the unit is possible in both modes. In normal mode, it is easier because the BixiCon unit is still running so you can connect to it anytime. In powersave mode it is only possible when the unit is woken up. This period is usually very short, but there is a way to keep the unit online longer. This can be set with stay online button. If this state is activated, the unit will remain online for 15 minutes after the next upload time. At the beginning of the wake-up time, there may be a problem connecting to the intervalometer because the connection to the internet could be overloaded.

In powersave mode you can also change some basic time-lapse parameter without connection to the unit. We call this functionality offline configuration. This new configuration will be downloaded to the unit next wake up time.

Browser

Browser is connected with our cloud storage BIXION drive and allows you to show taken pictures to anybody. With browser you can obtain also other functionality like history browsing, automatic daily videos or basic face blur function. Our browser runs on `time.bixion.com/{url_path}` and can be easily configured via our Dashboard page.

- Dashboard
- Browsers
- Services

- My Account
- Log Out

BIXION TIMELAPSE BROWSER
http://www.time.bixion.com/ValasskaPolanka



Drag and drop a logo here or click

BROWSER NAME

URL PATH

DESCRIPTION

PICTURE TIME

GENERATE VIDEO

FACE BLUR

THEME COLOR

OWN COLOR

Browser units + Add unit

VALASKAPOLANKA - HOUSE BUILDING

(A20CBD1571D2)

UNIT NAME

TIMESHIFT (HH-MM)



CANCEL
SAVE CHANGES

13 TROUBLESHOOTING

In the unit, a recovery mode is implemented for solving unexpected errors. Immediately after restarting the unit (unplug and then plug the power back in to restart the unit), press and hold both buttons until the unit beeps 3 times. After it connects to the created WIFI BIXICON-XXXX, go to the URL address 10.10.10.10 like in the configuration mode. There, you can find 3 options to recover the unit.

BIXICON 3

Rescue Mode

Status	Unit ID: A2BF442EB75B Time (UTC): 2019-04-30 17:21:19 Network Link: UP IP address: 192.168.1.80/24 Gateway: 192.168.1.1 Online: YES <small>Note: In rescue mode, only ethernet network with DHCP configuration is allowed.</small>
Reset to defaults	Reset unit to its default state. Software version will remain the same, user configuration will be set to default values.
Factory reset	Reset unit to its factory default software. Also, user configuration will be set to defaults.
Software update	Software update to the latest version. User configuration will be set to defaults. The unit must be connected to the internet.

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14 IMPORTANT SAFETY INSTRUCTIONS

Read these instructions carefully and store them for future use! If you don't follow these instructions, you may lose your right to guarantee!

- Please keep these instructions in a safe place so you can access them easily.
- This device must not be used by a person (including children) with physical or mental impairments or by an inexperienced person, unless properly trained or schooled on how to manipulate the device safely or unless they are properly supervised by a qualified person who is responsible for their safety.
- Make sure the voltage stated on the product label corresponds with the voltage of your wall socket before you plug it in.
- This device requires at least 8V - 1A power supply. If you don't use a power supply with proper voltage level, you risk damaging the device.
- Never use accessories which were not delivered with this device or which are not recommended by the manufacturer of this device.
- Make sure that all the cables and the device itself don't get close to water or dampness.
- The device is not waterproof. When used outdoors, it must be protected from water, dampness and dust.
- Never wash the device under running water or immerse it in water or another liquid.
- Do not use the device for any other purposes than those intended.
- Never attempt to repair the device by yourself, do not modify it. Let the manufacturer fix any problem that comes along. Any unauthorised modifications of the device during the warranty period may violate the warranty policy.
- The device is used to control the connected camera which is supported by the device.