

# MIOPS Smart+ User Manual

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## 10. SETTINGS

## 1. Content of the Package

When you purchase a MIOPS Smart+, it will be delivered with the following items.

- 1 x MIOPS Smart+
- 1 x Rechargeable Battery
- 1 x Flash Connection Cable (PC SYNC)
- 1 x USB Charge Cable

## 2. Charging and Operation

MIOPS Smart+ comes with a rechargeable and replaceable battery which lasts up to 4 days with a single charge. The battery will be charged when you connect MIOPS Smart+ to a USB power source. You can use your computer USB port for this purpose.

You can power MIOPS Smart+ directly from the USB port even if the battery is not attached into the device.

**Warning:** Using MIOPS Smart+ with other type of battery and power source may harm your device.

## 3. First Use

Your MIOPS Smart+ may not be delivered with the latest firmware. If a new firmware has been released, before you have used it for the first time, you should update the firmware first. To get detailed information about the firmware upgrade, see the Firmware Upgrade Section.

The rechargeable battery comes partially charged. You can use it right out of the box but you may need to charge to get it fully loaded. You can charge the battery using any USB charger (500 mA min.) or the USB port of your computer. MIOPS Smart will be delivered with a Mini-USB cable. You can use this cable to charge it. The mini end of the USB cable will be plugged into the USB port. It is located on the left side of the device under the protective cover.

Opening screen of MIOPS Smart+ will appear on the device showing the MIOPS logo and the device firmware information at the bottom of the screen. It will switch to main menu automatically in three seconds.

**Opening Screen**



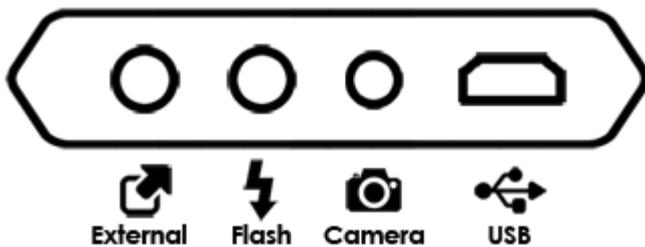
**Main Menu**



#### **4. Camera and Flash Connection**

The MIOPS Smart+ uses connection cables to trigger your camera or flash unit. Your unit will be shipped with the proper camera and flash connection cables. The MIOPS Smart is a versatile device, which is compatible with many brand and models. You can use the same device with many different cameras by just changing the connection cable.

The MIOPS Smart+ has separate outputs for the camera and flash cables. Both of the output ports are located on the left side of the device under the protective cover.



The camera cable port is a 2.5 mm stereo female jack. The camera cables have the male 2.5 mm stereo jack on one end. This end is plugged into the camera connection port. The other end changes depending on the camera make and model. This end is plugged in the shutter release port of your camera.

The flash cable port is a 3.5 mm mono female jack. There is only one type of the flash connection cable. It has a 3.5 mm male jack on one end. This end is plugged

into the flash connection port. The other end of the cable is a standard PC Sync port. This end is connected to the PC Sync port of the flash unit. If your flash does not have a PC Sync port, you can use a hot shoe adapter with a PC Sync port.

You can use both of the outputs at the same time. They are electrically isolated from each other. They trigger the connected device synchronously. Some older flash units require high voltages (~50 V) to be triggered. These flash units are not compatible with the MIOPS Smart+. Using such a high voltage flash unit can damage your device.

The camera and flash cables are designed to trigger the cameras and flash units only. Do not use them for any other purpose. Doing so may damage the cable or the device.

## 5. Mobile Application

You can use your MIOPS Smart+ as a standalone device without the involvement of your smartphone or tablet. However, we also offer a mobile app which has been designed as an interface to configure and control your MIOPS Smart+ easily. The communication between the smartphone and MIOPS Smart is done over Bluetooth connection. So, your smartphone has to be compatible with Bluetooth 4.0.

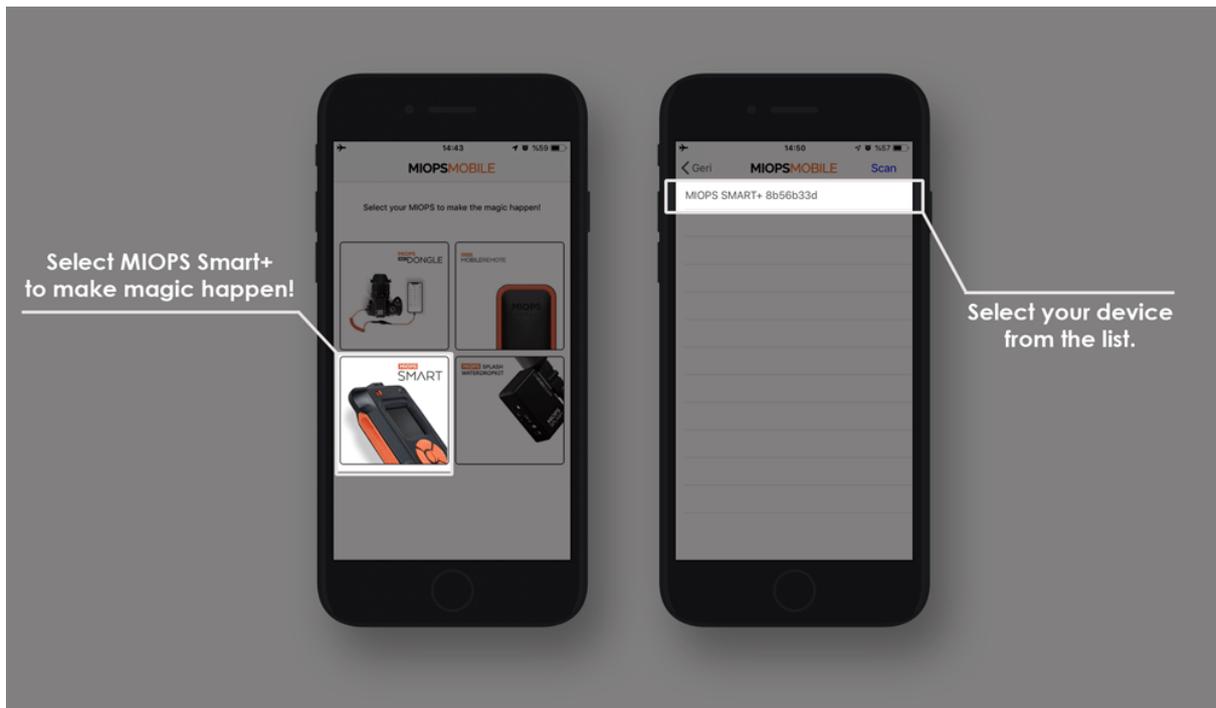
MIOPS MOBILE app is available on iOS and Android platforms. Search for MIOPS MOBILE in your app store, or use the following buttons to download the app.



## 6. Connecting to MIOPS Smart+

**Warning:** Please make sure that your Bluetooth is turned ON in the connection preferences of your smartphone or tablet.

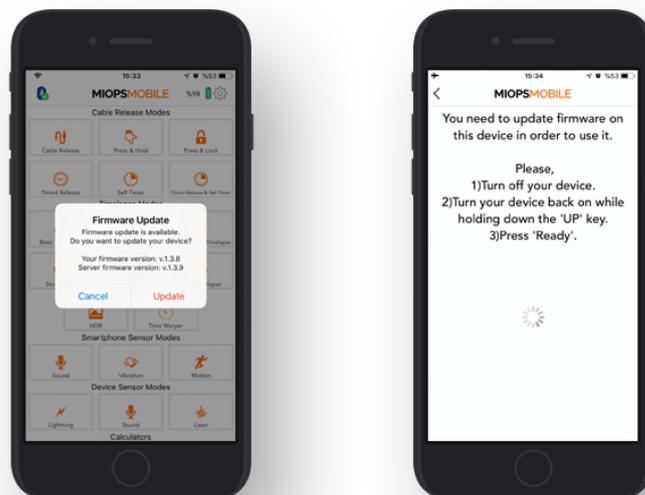
After opening the mobile app, you will be asked for selecting your MIOPS product. After selecting MIOPS Smart+ from the list, you will be listed all available Smart+ devices around. In case your device is not shown in the list, make sure that your Smart+ is turned ON and click the Scan button again.



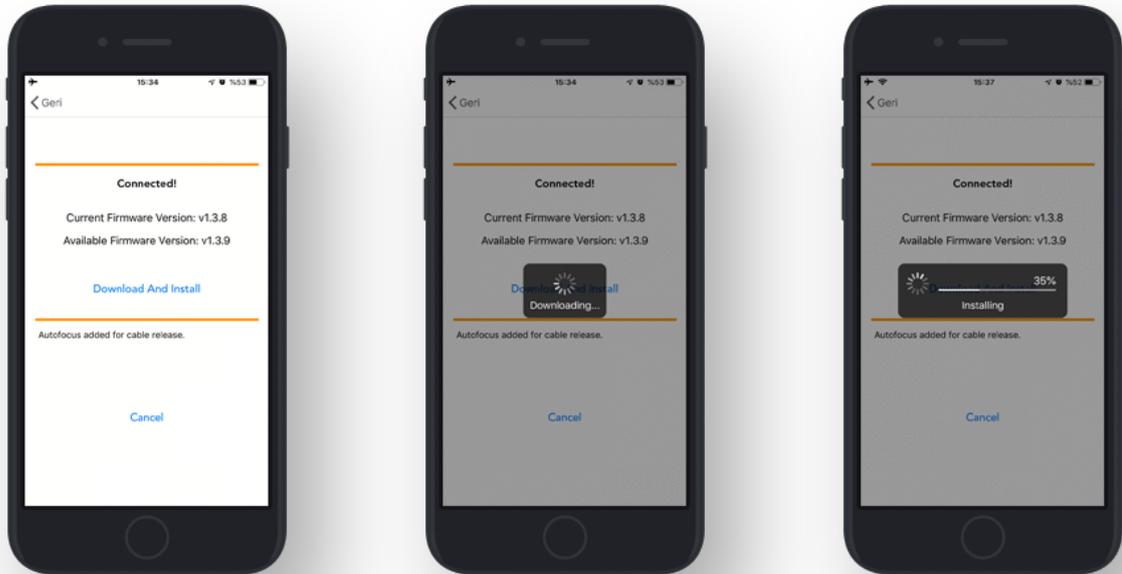
## 7. Firmware Upgrade

MIOPS Smart+ has the capability of updating its firmware without needing any cable connection to a computer. You can use the mobile app to check for new firmware version and then update the device with a single click.

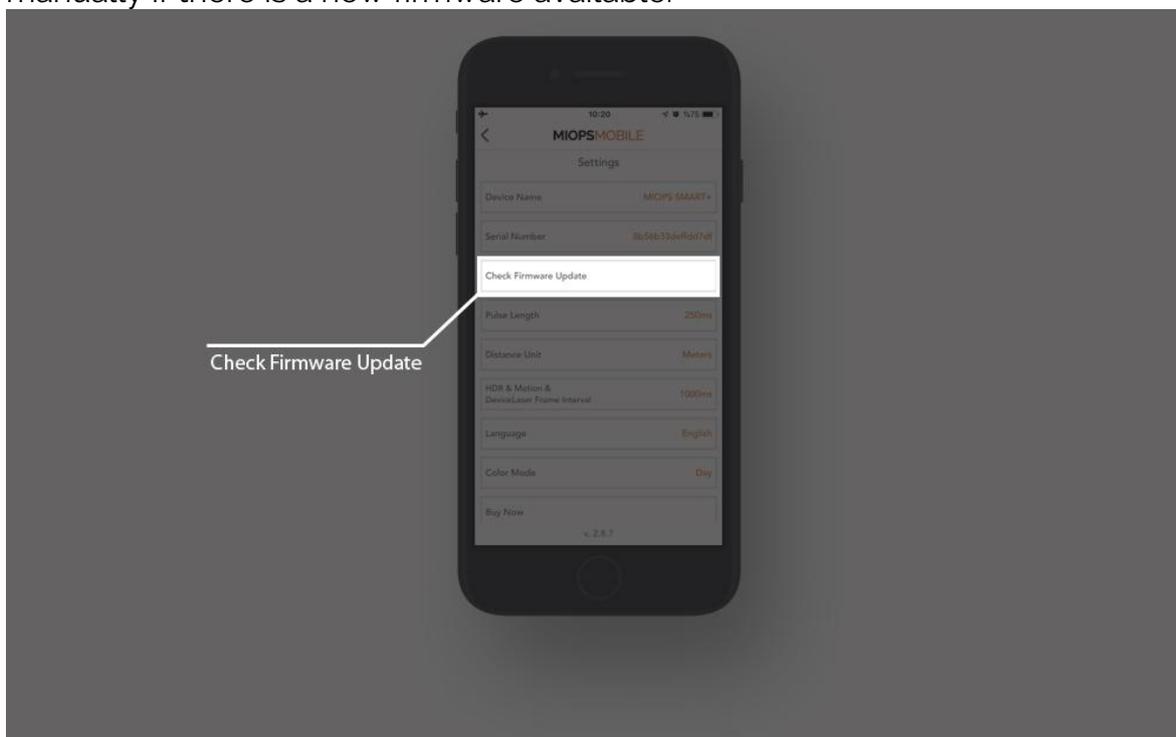
When you connect your device through MIOPS MOBILE app, it automatically checks your device's firmware version and prompts a pop-up message if a new firmware is available.



When you click "Update" button, you will be asked to put your device to upgrade mode. In order to put your device to upgrade mode, you should turn your device off, then turn it back on while holding down the UP button. After clicking to Ready button, the firmware upgrade process will start immediately.



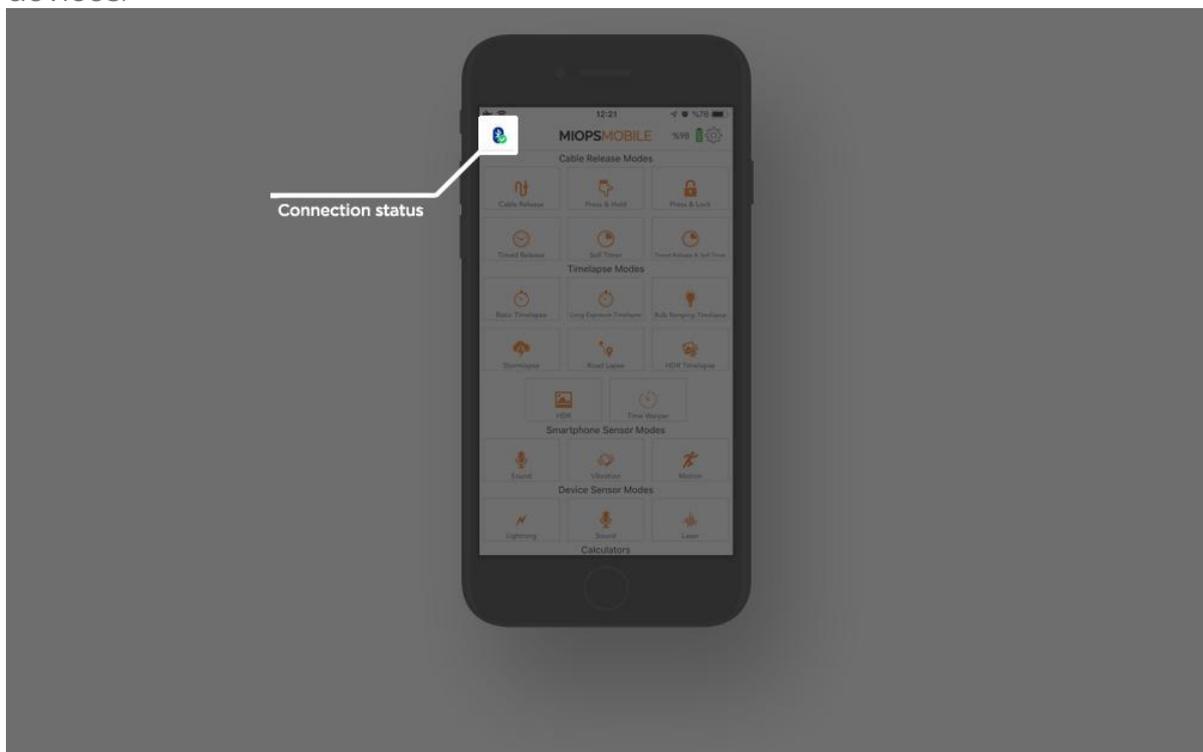
You can also use "Check Firmware Update" option in the Settings menu to check manually if there is a new firmware available.



## 8. Using the Mobile Application

The mobile app has a main menu to switch between different modes which are listed from top to the bottom. You can select the mode you want to use by touching the icon. The menu will scroll down to show additional modes that do not fit into the screen. The main menu will disappear once you select any mode and the app will enter into the configuration page of that particular mode. You can switch between different modes anytime. In order to do that, you just need to click the arrow icon on the top left-hand side of the screen. When you switch back and forth between different modes, the settings will not change.

When you connect your MIOPS Smart+ through the MIOPS MOBILE app, you will notice a Bluetooth icon with a green tick on the top left-hand side of the screen. This shows that you connected your device successfully. If you click the same icon, you will notice a warning asking if you really want to disconnect from Smart+. You can click "Yes" if you want to disconnect and search for other devices.



## 9. FEATURES

### 9.1. CABLE RELEASE MODES:

In this section, you will find information about different cable release modes.

#### 9.1.a. Cable Release:

The Cable Release mode is the basic mode to trigger your camera or flash. It does not have any parameter. The moment you touch the orange button, MIOPS Smart+ will trigger your camera for the duration of the pulse length. If your camera is in bulb mode, the shutter will stay open as long as the duration of the pulse. Otherwise, the exposure of the camera settings will be valid.

Also, you can focus your camera by pressing the small button. It will keep your camera focusing as long as you press the button.



### **9.1.b. Press & Hold:**

The Press & Hold mode has a level of flexibility by keeping the shutter open as long as you keep your finger on the button. This way, you are not limited to the pulse length. When you touch the button, a counter will start at the bottom of the screen. You can count how many seconds/milliseconds have passed. The shutter will close when you release the button. Again, in order to control the shutter with this mode, the camera must be in BULB mode.



### 9.1.c. Press & Lock:

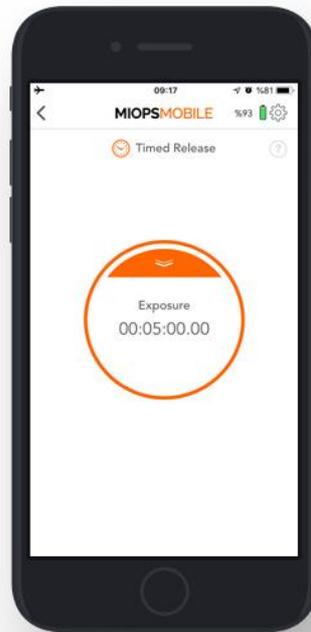
The Press & Lock mode is designed for long exposures. If you do not want to keep your finger on the screen all the time, you can use this mode. The shutter will open with a touch on the button and it will stay open until the next touch. When you touch the button, a counter will start at the bottom of the screen. The camera must be in BULB mode to have flexible exposure.



### 9.1.d. Timed Release:

The Timed Release mode is the perfect solution if you want to control the shutter with great precision. This mode has a single parameter:

**Exposure:** This parameter controls the exposure in hours, minutes, seconds and milliseconds. In order to change the parameter, touch the exposure value and a numeric keypad will appear. You can type in the desired exposure value and then touch anywhere outside of the circle. The new exposure value will be shown in the circle. Touch the notch on top of the circle and then pull the curtain down. You can start the exposure by touching the orange button again.

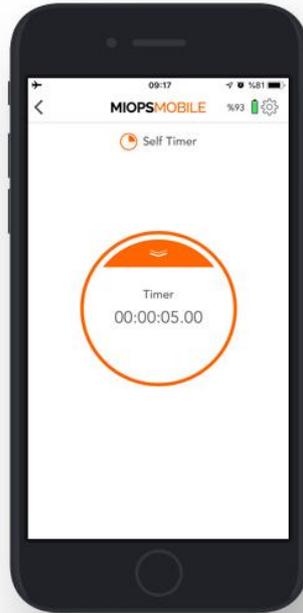


#### 9.1.e. Self Timer:

The Self Timer mode enables you to trigger the camera after the timer goes off. It has a single parameter:

**Timer:** This parameter is used to set a timer up to 100 hours in milliseconds. When the timer goes off, the camera will be triggered once.

The Self Timer mode does not have any exposure parameter. It will only trigger the camera for pulse length duration. When you start the timer, a circle will appear at the bottom of the screen. The circle will show the progress of the time and it will count down from the timer value.



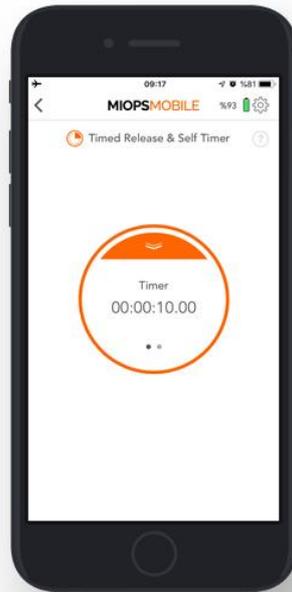
### 9.1.f. Timed Release & Self Timer:

If you want to have a custom exposure after the timer goes off, you can use the Timed Release and Self Timer mode. This mode combines the Self Timer with the capability of keeping the shutter open for a certain time. It has two parameters: Timer and Exposure.

**Timer:** This parameter defines when to trigger the camera.

**Exposure:** This parameter defines how long to keep the shutter open.

Once you set the parameters, you will see two counters at the bottom of the screen. The counter on the left displays the timer. It will count down from the timer value and when it goes off, the second counter will start showing how long the shutter has been kept open. The shutter will close when the custom exposure value is reached. The camera must be in BULB mode to have flexible exposure.



## 9.2. TIMELAPSE MODES:

In this section, you will find information about various timelapse modes.

### 9.2.a. Basic Timelapse:

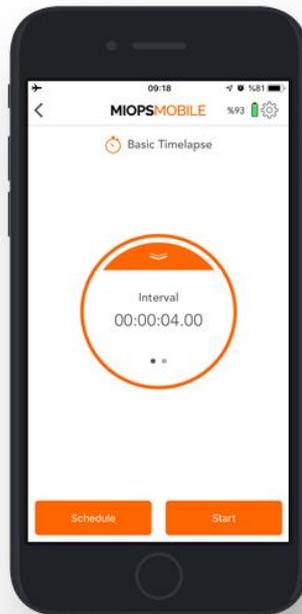
The Basic Timelapse mode offers to take time-lapse photos automatically without changing the exposure. It has two parameters; Interval and Frame.

**Interval:** This parameter defines the duration between each frame. The Interval can have a value from 13 milliseconds up to 100 hours.

**Frame:** This parameter defines how many pictures are to be taken. You can set the frame number up to 99999. If you set the frame number to 0, this will mean that the time-lapse will continue until you stop it.

The Basic Timelapse mode does not offer any control over the exposure. The exposure settings of your camera will be valid.

Once you start the mode, you can see the progress on the status screen. The counter on the top will show the interval status. When the circle completes, the interval period is over and the next picture will be taken. On the left-bottom, you will see another counter which shows the number of pictures already taken. With each frame, the counter will be increased by 1. Please note that, if the exposure setting of your camera is greater than the interval value, the time lapse process will not function properly. The exposure of your camera must be greater than the interval value. Otherwise, the number of taken pictures will be less than shown on the screen.



### 9.2.b. Long Exposure Timelapse:

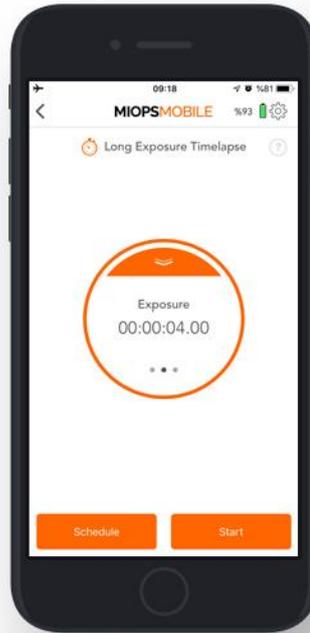
In this mode, you can define a custom exposure for the time-lapse photos. It has three parameters:

**Interval:** This parameter defines the duration between each frame. The Interval can have a value from 13 milliseconds up to 100 hours.

**Exposure:** This value defines the exposure value for each photo. You can set a custom exposure up to 100 hours in milliseconds.

**Frame:** This parameter defines how many pictures are to be taken. You can set the frame number up to 99999. If you set the frame number to 0, this will mean that the time-lapse will continue until you stop it.

When you start the Long Exposure Timelapse mode, you can see the progress on the status screen. The first counter will show the interval. Each time timer of the interval goes off, a photo with the custom exposure will be taken. After the exposure is over the frame counter will be increased by 1 and the interval counter will start again. This will continue until the targeted number of frames is achieved. The Long Exposure Timelapse mode requires that your camera is set to BULB mode. This is the only way of achieving custom exposures. If you do not set your camera to BULB mode, the exposure value of your camera will be valid and you will not get pictures with the exposure set on the MIOPS MOBILE app.



### 9.2.c Bulb Ramping Timelapse:

The Bulb Ramping Timelapse mode gives you the opportunity to take time-lapse photos with changing exposures. In regular time-lapse modes, all of the pictures will have the same exposure. This can be enough for some cases, but sometimes the light changes throughout the whole photo taking process. The exposure needs to be adjusted accordingly to avoid too dark or too bright pictures. Bulb Ramping Timelapse mode takes care of that.

**Interval:** This parameter defines the duration between each frame. The Interval can have a value from 13 milliseconds up to 100 hours.

**Initial Exposure:** This value defines the initial exposure value for each photo. You can set a custom exposure up to 100 hours in milliseconds.

**Final Exposure:** This value defines the final exposure value for each photo. You can set a custom exposure up to 100 hours in milliseconds.

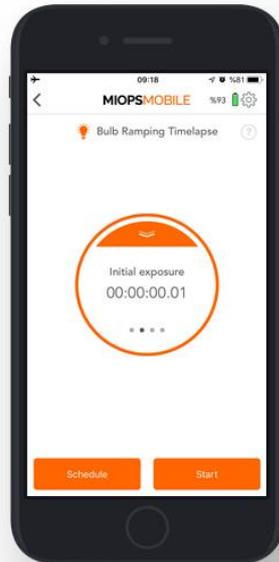
**Frame:** This parameter defines how many pictures are to be taken. You can set the frame number up to 99999. If you set the frame number to 0, this will mean that the time-lapse will continue until you stop it.

The process starts with Initial Exposure. With each frame, the exposure will be changed towards the final exposure linearly. At the final frame, the picture will have the final exposure. In order to be able to create custom exposure, the camera must be in BULB mode; otherwise, all of the pictures will have the same exposure.

The exposure value can have an ascending or descending change. This depends

on the initial and final exposure values. The change of exposure will be the same between each frame.

After you have set all parameters, you can start the process by pulling the notch on the button down and then touching the orange button.



#### 9.2.d. Road Lapse:

The Road Lapse mode uses GPS data from your smartphone. It takes a picture automatically each time you pass the set distance with your vehicle. The distance unit can be either Meters or Feet. You can set the distance unit under the Settings menu. This mode has two parameters, Distance and Frame.

**Distance:** This parameter specifies how much you need to travel before triggering the camera gain. You can set any value from 1 to 99999 in meters or feet. Please note that the GPS data of smartphones have a certain level of accuracy. This usually ranges about 10 to 20 meters. This can also change from phone to phone. So, if you set this value to a very low distance, the mode might not work as expected. The distance must be coordinated with the accuracy of your smartphone and the speed of your vehicle.

**Frame:** This parameter specifies how many pictures need to be taken. You can set the value anywhere between 1 and 99999.

After you have set the parameters, you can pull the notch on the button and then touch the button to start the process.



### 9.2.e. HDR Timelapse:

The HDR Timelapse mode combines the time-lapse with HDR (High Dynamic Range) mode. In other words, each frame of the time-lapse video will be an HDR photo.

This can be a complex goal to achieve, but the HDR Timelapse mode takes care of it very easily. This mode divides the screen into two parts. The upper part of the screen is about the time-lapse parameters. You can set the Interval value and the number of photos required for the time lapse video. The lower part of the screen shows the HDR settings. The HDR part has three parameters to be adjusted, Center, EV(+/-), and Frame.

**Center:** This parameter shows the exposure value that will sit in the middle of the sequence.

**EV(+/-):** This parameter shows how many stops each change will be.

**Frame:** This parameter shows how many pictures are to be taken for an HDR photo.

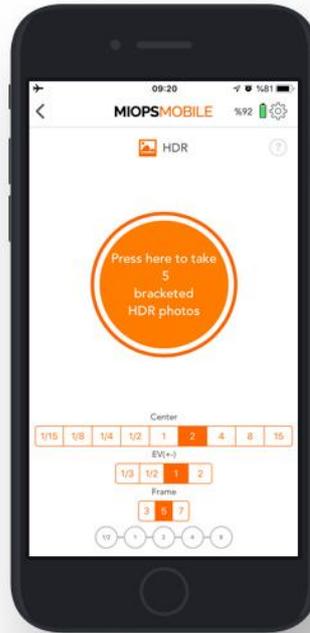
For the limitations of the HDR Timelapse mode, please see the warning in the HDR Mode section.



### 9.2.f. HDR:

The HDR mode will take pictures with different exposures automatically, so you can later combine them to make an HDR photo. This mode is based on three parameters. These are Center, EV(+/-) and Frame. HDR mode takes pictures in odd numbers (3, 5 and 7). The photo in the middle of the sequence (respectively 2nd, 3rd, and 4th) will have the center exposure value. The other photos will have changing exposures starting from the lower end up to the higher end. The other exposure values are calculated with the number of stops between each frame per the total frame number.

**Warning:** The HDR functionality is provided with the BULB mode of the camera. The camera must be in BULB mode; otherwise, all of the photos will have the same exposure. The shutter speed you can achieve over the shutter release port is limited. In most cameras, you cannot get faster than 1/30th of a second from the cable release port. Because of this limitation, some EV(+/-) and Frame values will be disabled for some Center values.



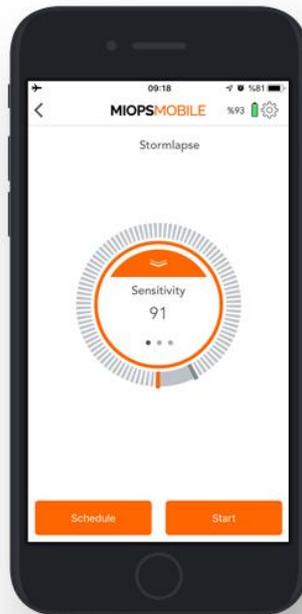
### 9.2.g. Stormlapse:

This mode is a combination of Timelapse and Lightning modes. You can take lightning photos while timelapse is in progress without disturbing your time-lapse sequence. This mode has 3 parameters:

**Sensitivity:** This value determines the sensitivity level of your device for lightning. The higher the value you set, the more sensitive it will be. You can move the threshold bar around the button by touching the grey bar.

**Interval:** This parameter defines the duration between each frame for timelapse. The Interval can have a value from 13 milliseconds up to 100 hours.

**Frame:** This parameter defines how many pictures are to be taken for timelapse. You can set the frame number up to 99999. If you set the frame number to 0, this will mean that the time-lapse will continue until you stop it.



### 9.2.h. Timewarper:

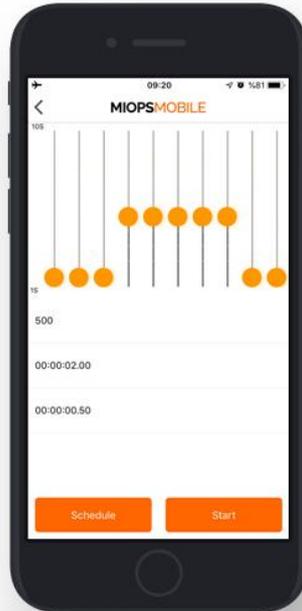
The Timewarper is very similar to the Bulb Ramping mode. Different than Bulb Ramping mode, this mode changes the interval between each frame rather than changing the exposure. So that you can speed up or down some parts of your time-lapse video. This mode has 3 parameters and a warper setting.

**Interval:** This parameter defines the duration between each frame. The Interval can have a value from 13 milliseconds up to 100 hours.

**Exposure:** This value defines the exposure value for each photo. You can set a custom exposure up to 100 hours in milliseconds.

**Frame:** This parameter defines how many pictures are to be taken. You can set the frame number up to 99999. If you set the frame number to 0, this will mean that the time-lapse will continue until you stop it.

**Warper Setting:** This area allows you to change the speed of the timelapse by changing the interval for the specified area. The whole timelapse process is divided into 10 equivalent range by default. You can change the speed of each area by changing the interval. The longer the interval you set, the faster the video in this range.



### 9.3. SMARTPHONE SENSOR MODES

These modes use the smartphone's sensors to detect the events and trigger your camera or flash.

#### 9.3.a. Sound:

The Sound Mode uses the microphone of your smartphone to detect sound events. It has three parameters:

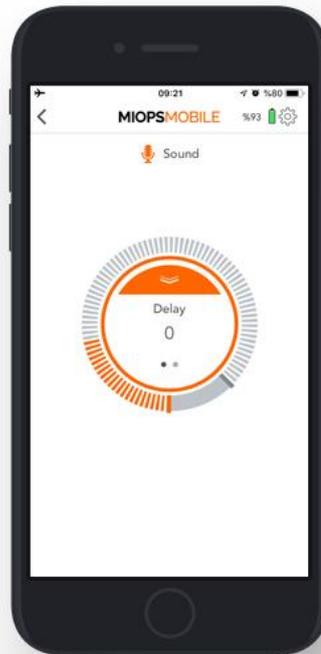
**Threshold:** This value determines the level of the sound that must be exceeded to trigger. The measured sound level will be displayed in real time with orange bars. This will help you to understand where to set the threshold approximately to filter out the environment noise. You can move the threshold bar around the button by touching the grey bar.

**Delay:** This parameter defines the duration between the detection of the sound and the triggering of the camera. You can define the delay anywhere from 0 up to 999 milliseconds.

**Mode:** You can select one of the two possible modes. The modes are the "Continuous Shot" and the "Single Shot". In the "Continuous Shot" mode, it will trigger the camera each time a sound event is detected. This can cause multiple pictures to be taken or multiple triggering of the flash. If you don't want this to happen, you can select the "Single Shot" mode. In this mode, it will trigger the camera only once, and then it will stop. You will need to start the sound mode running again to take another picture.

In the sound mode, the distance between your sound source and the smartphone can make a difference. Due to the propagation speed of the sound, you may want

to bring the smartphone closer to the sound source.



### 9.3.b. Vibration:

The Vibration mode is very similar to the Sound mode. The only difference is that vibration events are detected to trigger the camera or the flash.

**Threshold:** This value determines the level of the vibration that must be exceeded to trigger. The measured vibration level will be displayed in real time with orange bars. This will help you to understand where to set the threshold approximately to filter out the environment vibration. You can move the threshold bar around the button by touching the grey bar.

**Delay:** This parameter defines the duration between the detection of the vibration and the triggering of the camera. You can define the delay anywhere from 0 up to 999 milliseconds.

**Mode:** You can select one of the two possible modes. The modes are the "Continuous Shot" and the "Single Shot". In the "Continuous Shot" mode, the MIOPS Mobile will trigger the camera each time vibration is detected. This can cause multiple pictures to be taken or multiple triggering of the flash. If you don't want this to happen, you can select the "Single Shot" mode. In this mode, it will trigger the camera only once, and then it will stop. You will need to start the vibration mode running again to take another picture.



### 9.3.c. Motion:

The Motion Mode uses the camera of your smartphone to detect motion in the view area. You can aim the camera to the area that you want to observe. When a motion is detected, it will trigger your camera or flash. This mode has three different parameters.

**Accuracy (Sensitivity):** Just below the video screen, you will see horizontal adjustment scale. You can move the grey bar on the scale to the right or left to determine the sensitivity. If you move the bar to the right, the sensitivity will be increased. In this case, you will be able to detect motion events that are further away from the smartphone. If you move the bar to the left, the sensitivity will be decreased. If you do this, you will be able to detect motions that happen in an area which is relatively closer to the smartphone.

**Delay:** It determines the duration between the motion and the triggering of your camera. You can define the delay anywhere from 0 up to 999 milliseconds.

**Frame:** This parameter defines how many pictures to be taken in case motion is detected. Once a motion is detected, it will trigger the camera for so many times defined with the Frame parameter. You can set the frame the number all the way up to 99999.



#### 9.4. DEVICE SENSOR MODES

These modes use the internal sensors to detect the events and trigger your camera or flash.

##### 9.4.a. Lightning:

The Lightning Mode uses the internal light sensor to detect lightning events. It has a single parameter:

**Sensitivity:** This value determines the sensitivity level of your device. The higher the value you set, the more sensitive it will be. You can move the threshold bar around the button by touching the grey bar.



#### 9.4.b. Sound:

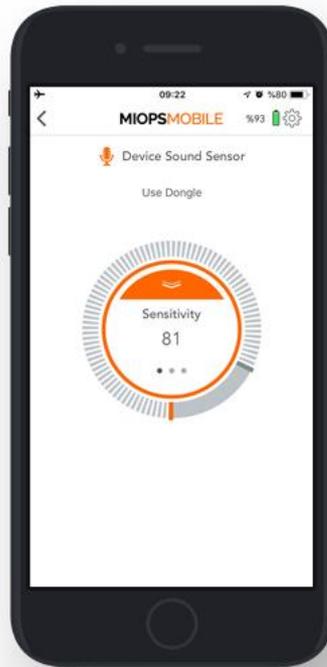
The Sound Mode uses the internal microphone to detect sound events. It has three parameters:

**Sensitivity:** This value determines the sensitivity of the device. The higher the value you set, the more sensitive it will be. You can move the threshold bar around the button by touching the grey bar.

**Delay:** This parameter defines the duration between the detection of the sound and the triggering of the camera. You can define the delay anywhere from 0 up to 999 milliseconds.

**Mode:** You can select one of the two possible modes. The modes are the "Continuous Shot" and the "Single Shot". In the "Continuous Shot" mode, it will trigger the camera each time a sound event is detected. This can cause multiple pictures to be taken or multiple triggering of the flash. If you don't want this to happen, you can select the "Single Shot" mode. In this mode, it will trigger the camera only once, and then it will stop. You will need to start the sound mode running again to take another picture.

In the sound mode, the distance between your sound source and the device can make a difference. Due to the propagation speed of the sound, you may want to bring the device closer to the sound source.



#### 9.4.c. Laser:

The laser mode requires an external laser pointer (should be purchased separately). This mode is based on the existence of a laser beam fed to the optical receiver of the device. It will trigger your camera or flash unit whenever the beam is broken. You can use a regular laser pen or pointer as the laser source. The color of the laser does not make any difference. The Laser Mode has three parameters:

**Threshold:** This value determines the level of the light that will be considered as a laser. The measured light level will be displayed in real time with orange bars. This will help you to understand where to set the threshold approximately to filter out the environment light. You can move the threshold bar around the button by touching the grey bar.

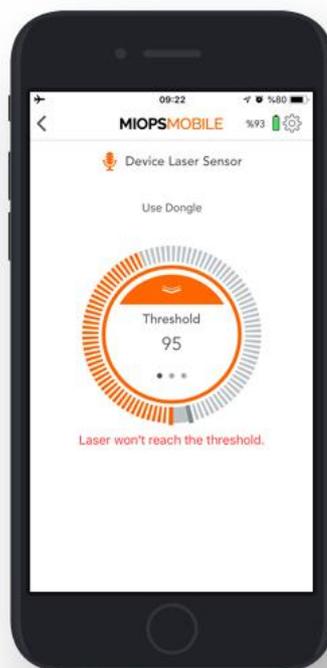
**Delay:** This parameter defines the duration between the detection of the laser break and the triggering of the camera. You can define the delay anywhere from 0 up to 999 milliseconds.

**Frame:** This parameter defines how many pictures to be taken in case the laser beam is broken. Once the laser beam is broken, it will trigger the camera for so many times defined with the Frame parameter. You can set the frame the number all the way up to 99999.

The laser mode requires a consistent laser beam to be fed to the optical receiver of the device. The receiver is located on the front face of the device. The receiver is behind a transparent window and there is an optical lens on the window. The lens will help to focus the laser beam to the receiver.

The laser beam must hit the lens on the window. A slight movement of the laser source can move the beam away from the receiver, so make sure that both the laser source and the device are firmly mounted on a steady stand. After you have firmly mounted the laser source and the device, if the laser beam is correctly aligned to the receiver, the message on the screen will turn from "Laser won't reach the threshold" to "Laser trap ready". Seeing a constant "Laser trap ready" message on the screen is the first condition of the laser mode.

**WARNING:** Please take every possible safety caution while you are working with a laser. Never point the laser to your eyes, other people and animals.



## 10. SETTINGS:

You can use Settings menu to change application related or device related settings or to get information.

**Device Name:** This parameter shows the name of your device. Default name is MIOPS Smart+ for all devices. You can assign a different name to your device by clicking this parameter.

**Serial Number:** This parameter shows the serial number of your device.

**Check Firmware Upgrade:** This button is used to check if there is a firmware available.

**Pulse Length:** This parameter is used to determine the pulse length of each trigger signal for those modes which don't have an exposure parameter.

**Distance Unit:** This parameter is used to determine the distance unit for Roadlapse mode. It can be either "Meters" or "Feets".

**HDR & Motion & Laser Frame Interval:** This parameter is used to determine the interval between each frame for HDR, Motion and Laser modes.

**Language:** This parameter is used to change the language of the mobile application.

**Color Mode:** This parameter is used to change the color of the mobile application. It can be switched between "Day" and "Night".

**Buy Now:** This button is used to visit the store for purchasing the product.

**Feedback:** This screen is used to give feedback about the mobile application to the developers.

**PIN Code:** You can assign a PIN to your device to prevent others from connecting to your device.

**IR Settings:** MIOPS Smart+ has IR triggering capabilities. You can select your camera brand between Canon, Nikon and Sony to trigger your camera if it has IR triggering capabilities.

**Smart+ Screen Saver:** This parameter is used to define the timeout value to turn the screen of Smart+ off for energy saving.

**Shutter Settings:** This parameter is used to set the behavior of Smart+ camera and flash outputs. You can select between "Sync", "Bulb" and "Mirror Lockup".

**Sync:** Flash and camera is triggered at the same time.

**Bulb:** Camera is triggered to start long exposure as soon as the mode is started. Flash is triggered once an event is detected.

**Mirror Lockup:** Camera is triggered once to lock up the mirror as soon as the mode is started. Camera is triggered again once an event is detected.

