

ARH CAM S1

PORTABLE SPEED ENFORCEMENT
AND TRAFFIC MONITORING SYSTEM



USER MANUAL

ARH CAM S1 USER MANUAL

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INTRODUCTION

S1 is a mobile no-staff speed and traffic enforcement camera with on-board ANPR. It is capable of spotting a violator from 1200 meters (4000 feet) away and returning certified speed measurement result from 600 meters (2000 feet) away. The unique high-precision built-in laser technology reaches as far as no other speed monitoring camera on the market.

The S1 speed camera is extremely portable: setup takes less than two minutes. Afterwards, no human interaction is required: the camera measures speed and uploads every passing vehicle's data – or, depending on user-defined settings, just the violators – via a secured and encrypted channel. The uploaded results include license plate data, the vehicle's speed, exact location (via GPS) and time stamp as well as other selectable parameters. The result files are encrypted and cannot be altered.

This guide is going to show you the functions of the app and the methods of the use.

Structure of the Manual is the following:

- First, accessing to the camera and the operation of the device will be discussed.
- Next, a closer look will be taken at the menu overview.
- Moreover, the user will be guided through the sections of the features.
- Finally, usage of the tripod will be shown.

SETUP ARH CAM S1

1. Connect external battery to ARH CAM S1.

Hint

Power cable plug has a red straight sign to show the proper way of connecting to the camera. It must be on the top.

2. Turn on external battery.
3. Turn on the device by pressing and holding (approx. 1-2 seconds) the power switch of the device, located on the left side of the display. If the power switch is on, the green LED on the button indicates it.

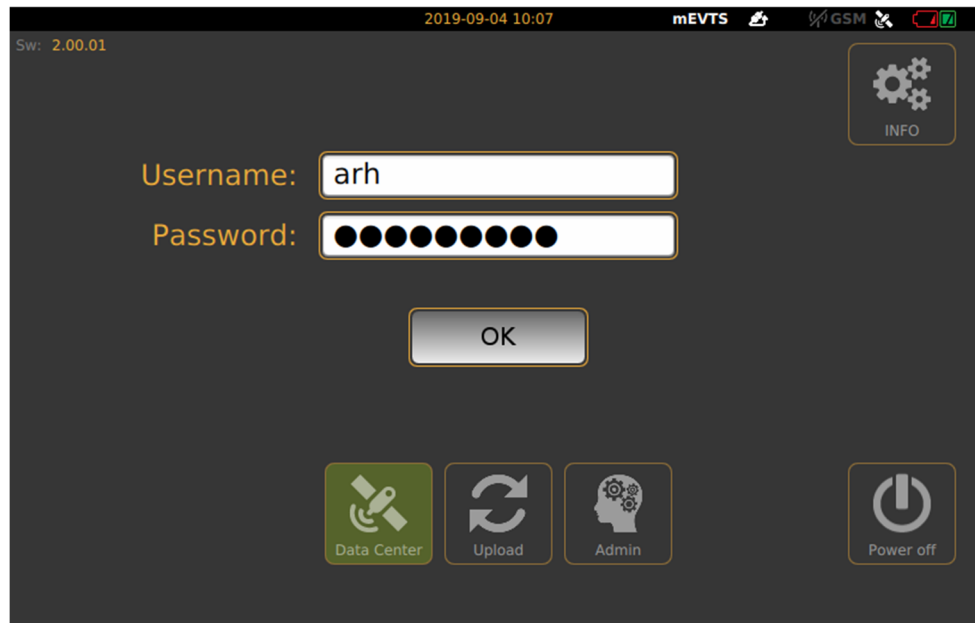
Note

If external battery is discharged, green light is flashing on power switch of the camera.

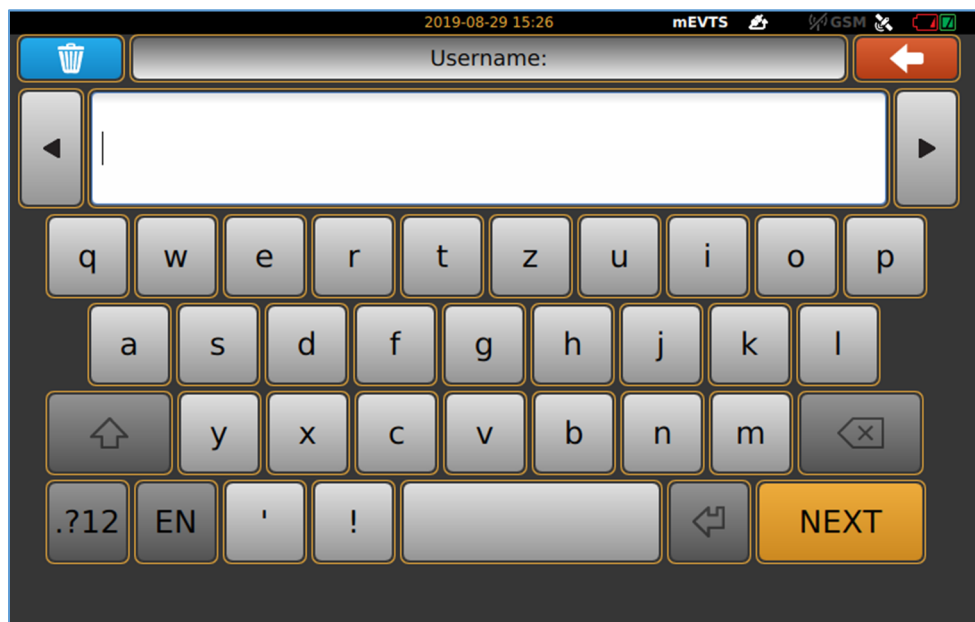
4. After turning the device on, it starts the installed software. During the start-up procedure the starting screen will appear with a progress bar, indicating the start.

LOGIN

After the start-up process, the Login screen will appear.

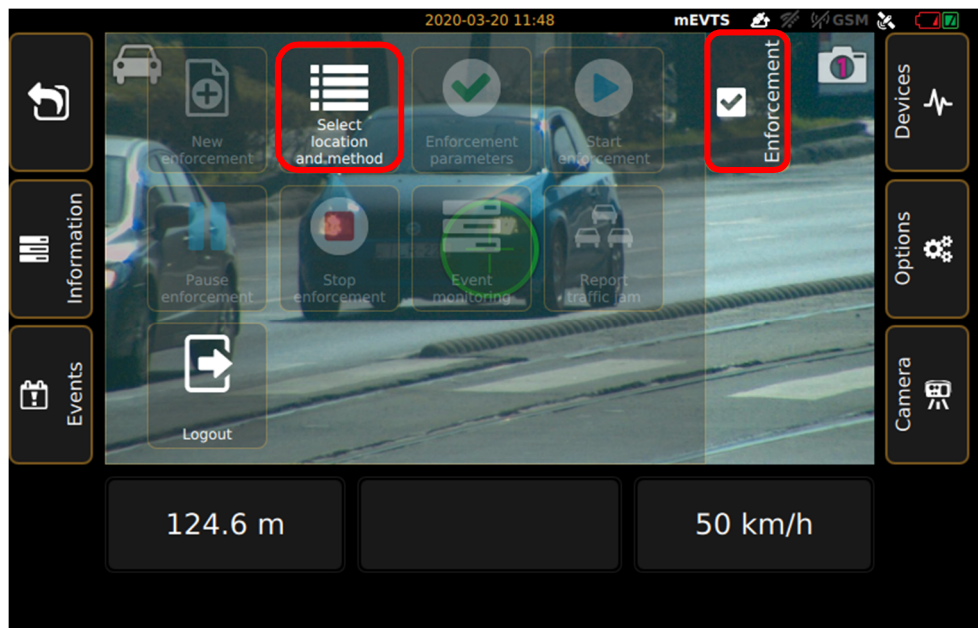


On the Login screen, select **"Data Center"** icon, type in Username and Password (click in to the empty field, touch-screen keyboard will pop-up, enter necessary characters, then press "Next" button), press OK, "Main" screen will appear.



SETUP ENFORCEMENT

1. Position camera properly so as to the white or green circle with cross must be in the level of the number plates. Hereinafter we call it **marker**. On the **"Main"** screen, click on **"Enforcement"** floating menu, located on the upper left side of the screen. **"Enforcement"** menu contains **"Select location and method"** icon, click on it.



2. Submenu will appear with measurement points and enabled control functions for that position, after selection, click on "Next" icon.
3. "Description" can be given to the measurement, after it is done, press "Next" icon.
4. In the **"Define measuring limits"** window, set measurement limits, then tap "Next" icon. For measurement above the lane (bridge, overpass), the value of **"Offset from lane center"** should be 0 [m]. In case of measurement next to the lane, the middle of the inspected lane and the distance from the device must be set. The **"Offset from lane center"** value also defines the minimum value of **"Minimum distance"** (10 times the offset from lane center)

Note

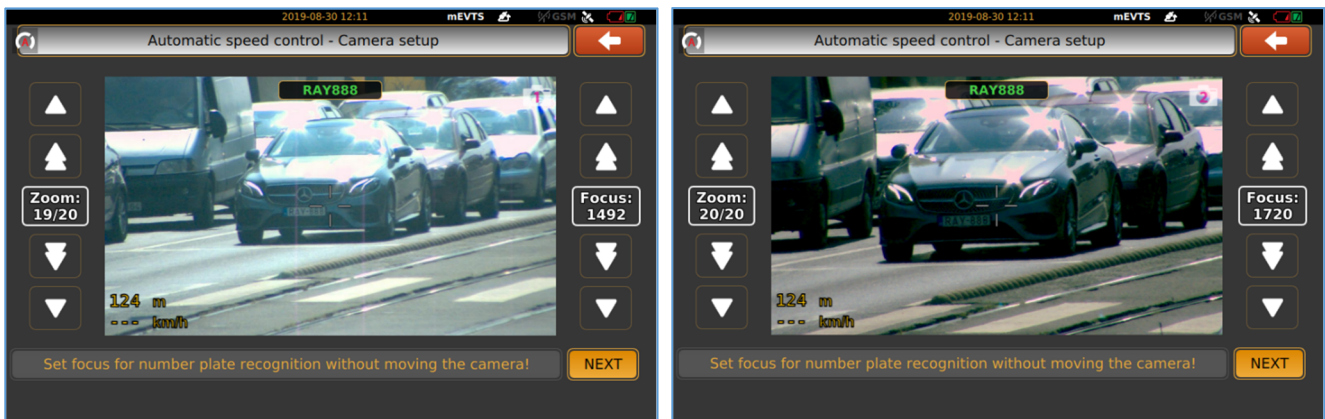
To exactly measure the "**Offset from lane center**", touch the ruler icon to help you accurately measure the distance from the center of the lane. Point the device at the center of the lane, then touch the ruler icon next to field A to insert the measured distance. You will see that the value of A is the same as the distance displayed in the lower left corner of the screen. When you are done, touch the "Next" icon.

5. "**Enforcement**" floating menu will appear, where "**Enforcement parameters**" can be chosen, click on that icon to go further.
6. In the "**Enforcement parameters**", optional control function can be chosen (selected functions appear in green highlight). The basic function of the device is "**Automatic speed measurement**", for which other control functions can be chosen. Clicking on "Next" button to step on "**Speed limits**".
7. The "**Automatic Speed Control - Speed Limits**" window is the next step where you can set speed limit values (the speed limit set for the road type and the documented speed limit for recording a violation) per vehicle category. Actual speed limit values can be given with virtual keyboard by clicking into the numeric field or tapping the up and down button next to numeric field, when it is done, press "Next".
8. 3 options are available to choose from: use one of the 2 sensors in the camera separately or using 2 sensors at the same time. In the second case, you are able to choose between the sensors during measurement.

Note

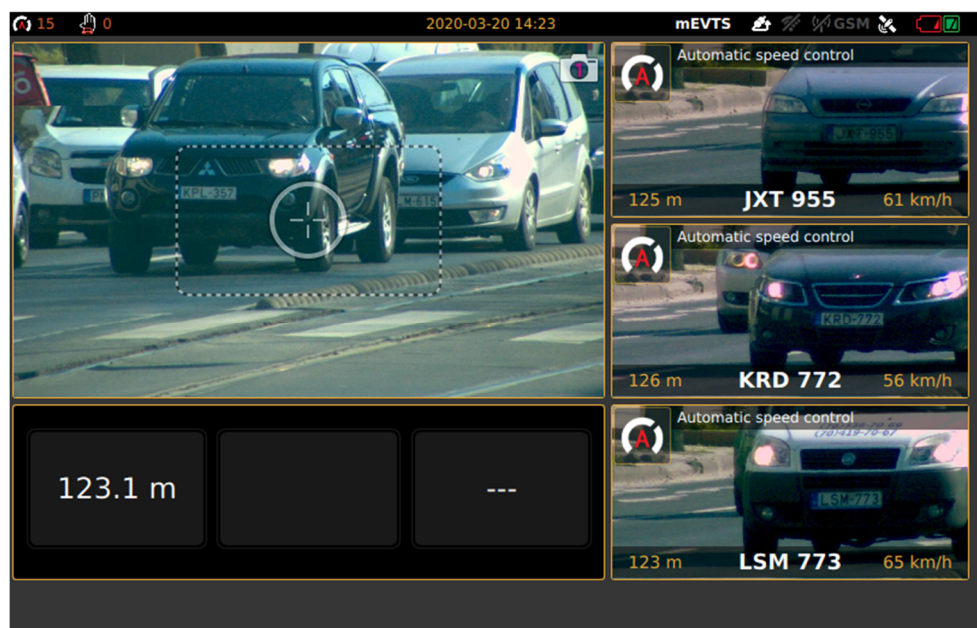
2 sensor operating mode only available at "**Automatic speed control**"!

9. In case of 2 sensors enforcement, it needs to setup 1. and 2. sensor individually. Zoom and Focus can be easily adjusted for the proper setting.



10. **"Locking camera"** will appear to remind to tighten tilt lock knob and tap **"Next"**.

11. After finished setting of all measurement function and parameters, it will change to **"Main"** screen again with the **"Enforcement"** floating menu, and **"Start enforcement"** icon is become active.

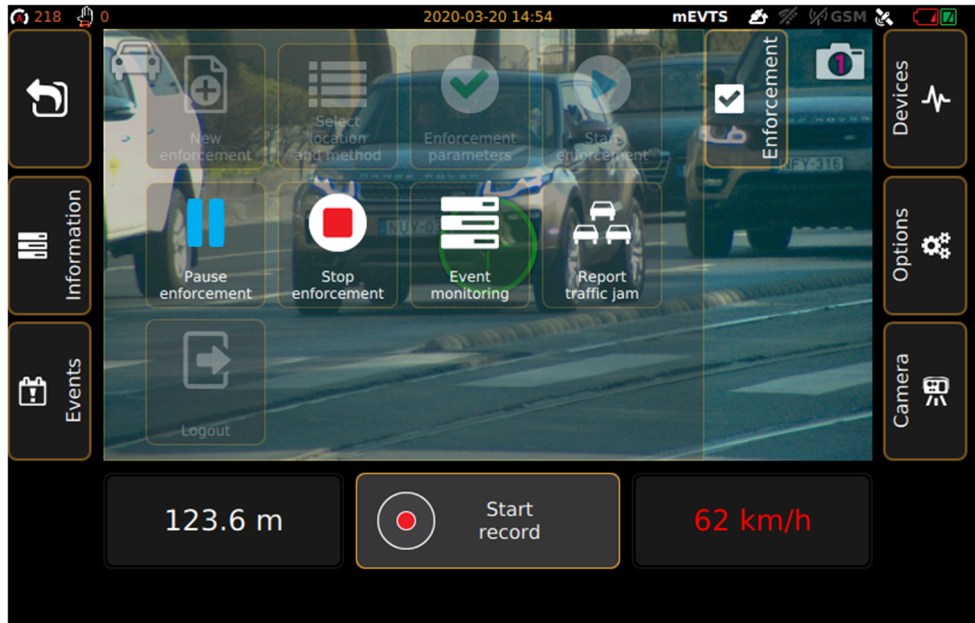


12. By clicking on **"Start enforcement"** icon, the screen will guide you to the **"Check of location parameters"** to verify all values, if it is correct, press **"Accept"** and start enforcement. If need more adjustment or correction during the setup, you can clear all setup until now and go back to the main window.

13. ARH CAM S1 device is started measurement. First, split window will appear with the live view on the left side and 3 small windows with the last 3 detected events. By tapping on the left live view image, it will guide you back to the main window.

STOP ENFORCEMENT

If you have finished the measurement, click on **“Stop enforcement”** icon, then **“Log out”** icon and finally tap **“Power off”** icon on the Login window to switch off the device.



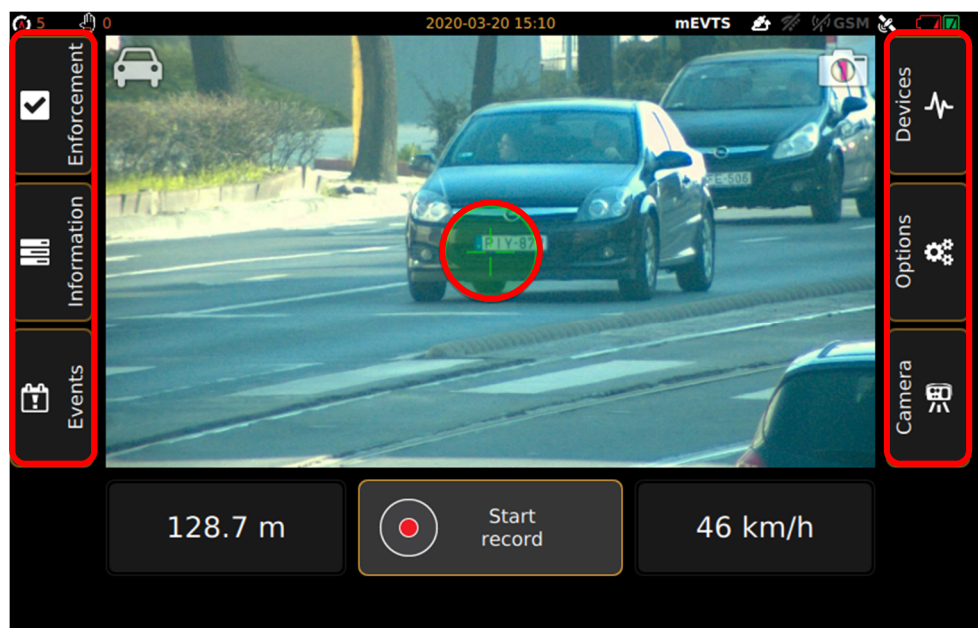
INTRODUCTION TO THE MAIN SCREEN

After login, the Main screen will appear. The live view is situated in the center of the screen with the information bar.

- Marker in the middle of live view shows:
 - a. Red cross - no reflected signal or targeted object is outside of the adjusted parameters. It is closer or further off
 - b. White circle – reflected signal, but no speed value
 - c. Green circle – reflected signal and speed value is also detected

The functions and settings of the device can be accessed through the floating menus by clicking the icons on both sides of the screen.

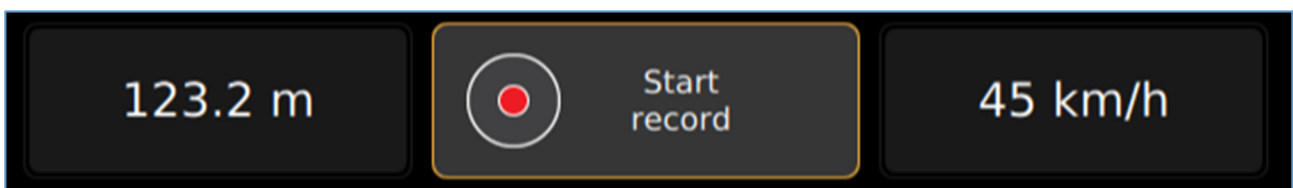
Exit from the displayed floating menu: tap again the icon of the menu or with the back sign on the initial position of the menu.



1. BOTTOM INFORMATION BAR

In the bottom information bar, you can see the vehicle's data which was reached by the laser beam: speed, direction, distance.

By tapping on **"Start recording"**, you can record a 15 second video from the enforcement. It will guide you next to the **"Setting of manually recorded event"** window, where you can give vehicle class for the event and playback the video as well. After you have chosen the vehicle class, press "Next" and it will jump to the **"Feature selection"** window, where event type settings are available. Choose one from them and tap **"Save"** button. The video is available in the **"Events"** menu.



2. UPPER INFORMATION BAR

The small icons on the upper left corner show the active enforcement functions.

Example:



According to the example, the current measurement registered 57 passing vehicles. The automatic speed measurement function recorded 32 presumptive infringement data, the traffic count registers 1 vehicle and with the manual speed measurement 15 presumptive infringement data was recorded on the device.

The date and the current time can be seen on the upper edge of the screen:

2014.12.10 11:57

** The software version, containing the test and educational profiles, are developed in case of occasional usage!*



excellent

Signal strength of the data connection (signal strength): weak, good,



Speed of the data connection: 2G, 3G, 4G



GPS connection indicator, white if it is connected, grey if it is not.



Wired network connection is established.

Satellite GPS connection indicator: if there is a connection it is white, if there is not, it is gray



Battery status (external, internal) *

** The battery status indicator on the screen is only indicative. The actual battery level of the external battery has to be checked on the indicator on the battery!*

Display examples:

External power supply / battery is disconnected, internal battery is discharged



External power supply / battery is disconnected, internal battery is good



External power supply / battery is connected, but it is discharged, internal battery is good



External power supply / battery is connected and it is good, internal battery is good



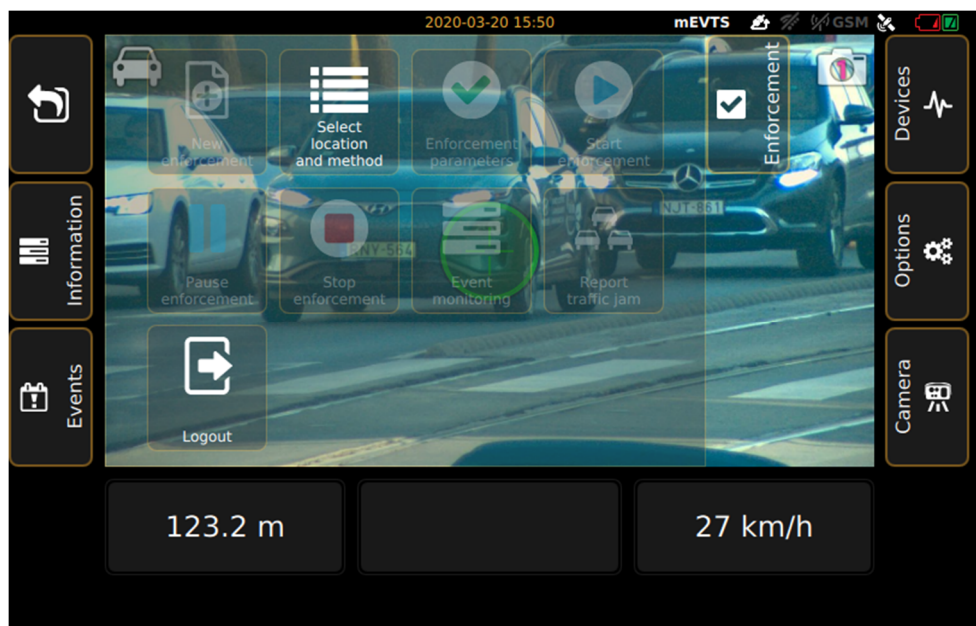
Note:

- The charged external battery does not charge from the internal battery!
- If the internal battery is discharged, it is advisable to charge it, because it may cause malfunction to the device (the external battery will also discharge during use).

3. ENFORCEMENT MENU

Select, add and edit all measurement function which is crucial for the enforcement.

- **New enforcement:** start adding new measurement parameters after a finished enforcement.
- **Select location and method:** enter related location and task data to the measurement method.
- **Enforcement parameters:** display the optional control functions.
- **Start enforcement:** start measurement.
- **Pause enforcement:** you can interrupt the enforcement.
- **Stop enforcement:** switch off measurement.
- **Event monitoring:** during measurement, the last three events displayed on the right side of the window.
- **Report traffic jam:** During the measurement, the congestion reporting functions can be used by tapping the icon.
- **Log out:** quit from the main window to the login screen.



4. INFORMATION MENU

- **Enforcement information:** Parameters and settings of the actual measurement can be seen
- Start/End of Enforcement,
- GPS coordinates,
- Distance and speed data,
- Status informations



Report details

Alkotás utca

Start: 2019-09-02 12:57:21 Lat: 47.492900
End: Lon: 19.023800
Location: Inhabited area User: arh

Minimum distance: 50 m
Maximum distance: 600 m
Minimum speed: 20 km/h
Maximum speed: 300 km/h

Speed limit: 50 km/h
Violation limit: 50 km/h
Speed limit: 50 km/h
Violation limit: 50 km/h

Traffic jam
Events: 1 pcs

Automatic speed control
Events: 47 pcs

Wanted vehicle
Events: 0 pcs

Speed control

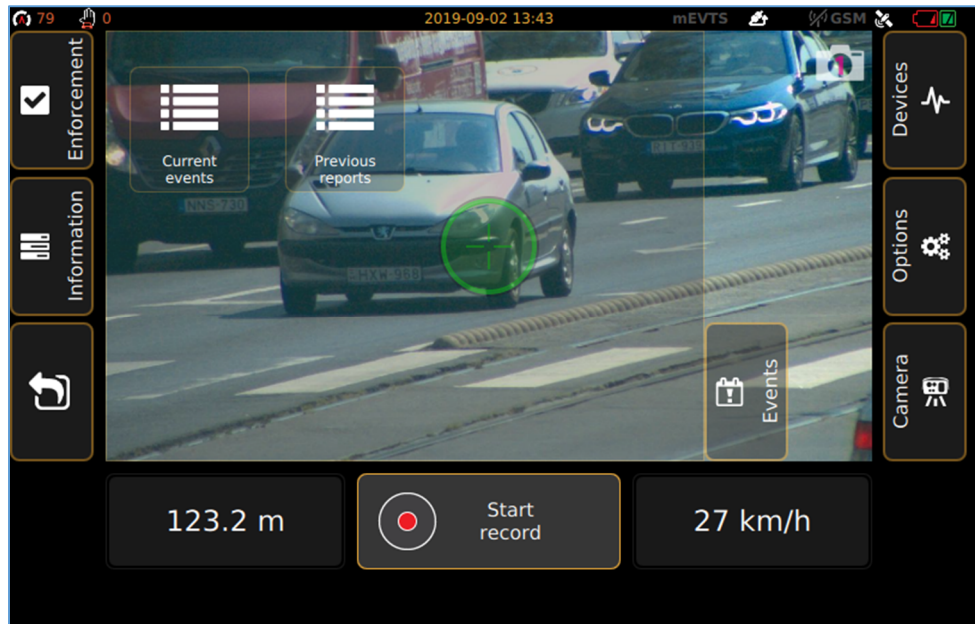
Control: Non-intrusive inspection
Status: Started
Headers: Wait for uploading
Images: Wait for uploading

NEXT

5. EVENTS MENU

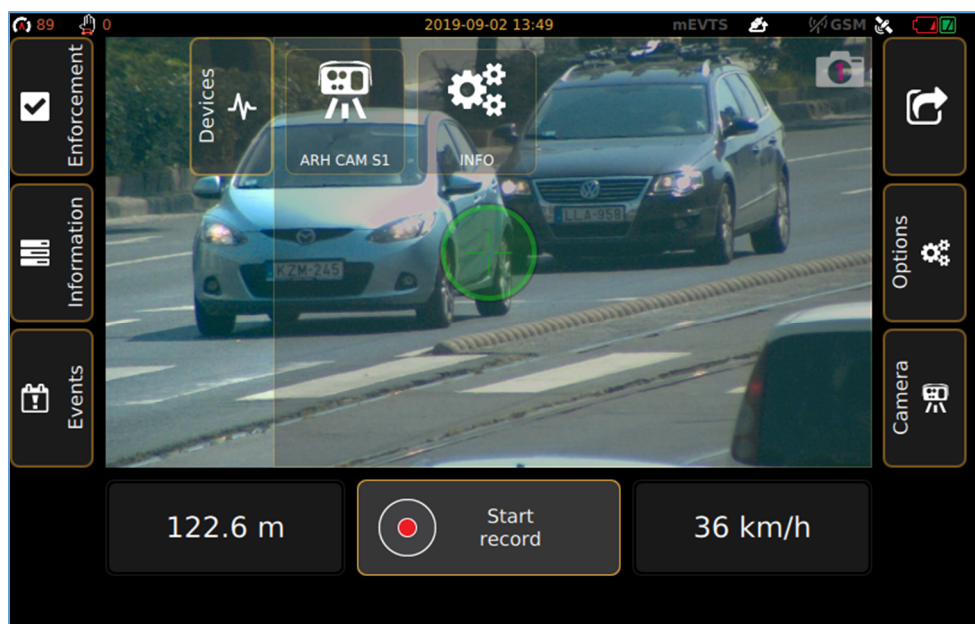
Entering this menu will list the data stored in the device's memory since the last upload:

- some previous measurement events are listed
- events recorded during the selected measurement session are listed
- recordings (pictures, videos) and data are listed for the selected events



6. DEVICES

- **ARH CAM S1:** camera data is displayed
- **INFO:** status of the device is displayed



7. OPTIONS

- Image on display can be adjusted according to the environment light conditions. During night measurement, brightness reduction of display is advisable to not be disturbing.
- License plate detection area can be set for more accurate setup (green light indicates it's working)



Note

During night measurement, it is recommended to reduce brightness of the display to not be disturbing.

8. CAMERA

- **Focus:** set focus to the required sharpness with **automatic focus button**, or with the **manual focus setting**, and the vehicles license plate seen on the livestream should be readable
- **Focus fine tuning:** adjust focus with finer scale.
- **"Set focus":** Tap to see live stream in full picture with important settings button (Zoom, Focus, Snapshot, Trigger signal, Live view enlargement, License plate recognition)
- **Zoom:** Zoom out and Zoom in icons serve for cropping setting of the image
- **Camera mode:**
 - **Day:** in day mode, you can adjust brightness according to the pace of the traffic:
 - **Slow:** inside of built-up area
 - **Normal:** outside of built-up area
 - **Fast:** on Freeway and Highway
 - **Night:** you can set 3 fix Infra values
- **Brightness:** In day and night modes, if the image is too dark or too light (not able to read license plates), the automatic brightness control can be fine-tuned.
- **Sensor:** if you set both sensors, you are able to switch between sensor 1 and 2
 - **1. sensor:** for licence plate reading
 - **2. sensor:** for image processing when using additional functions
- **Save:** after set all parameters, you can save all changes

Note

Recommended to set Zoom first and adjust Focus achieve sharper image for proper license plate reading.



DETAILED DESCRIPTION OF THE SPEED MEASUREMENT

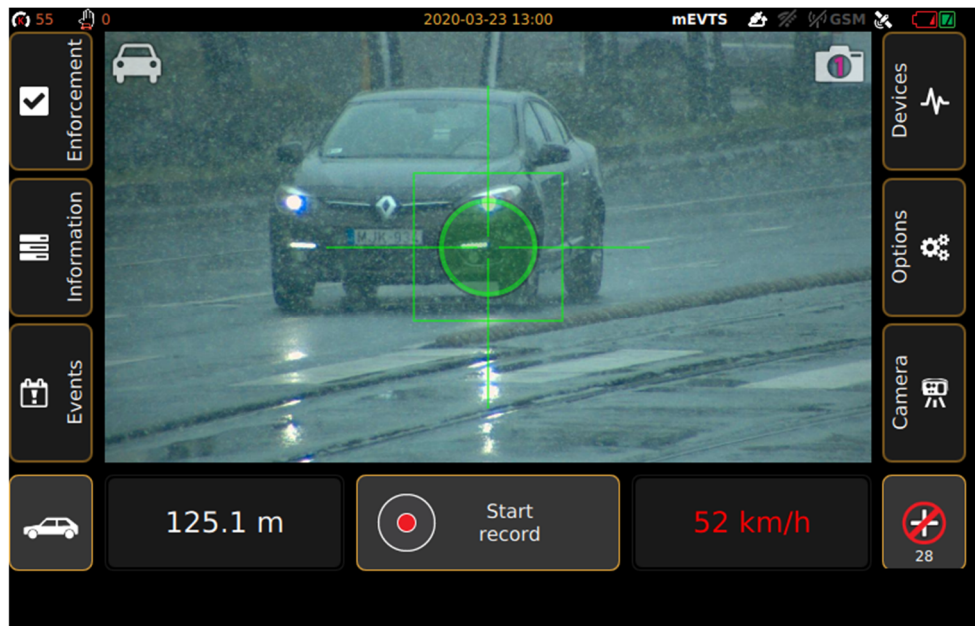
There are two measurement versions:

- **Automatic speed measurement:** there is no need for the operator during the measurement.



- **Manual speed measurement:** this function requires an operator. In addition, the camera must not be fixed, since the purpose of this type of speed measurement is that the camera must be point to the target vehicle in order to track the vehicles passing by. In case of follow-up tracking, the vehicle must be within 180 meters in order to read the license plate.





Marker: follow-up tracking, a green frame is displayed around the marker during continuous targeting.

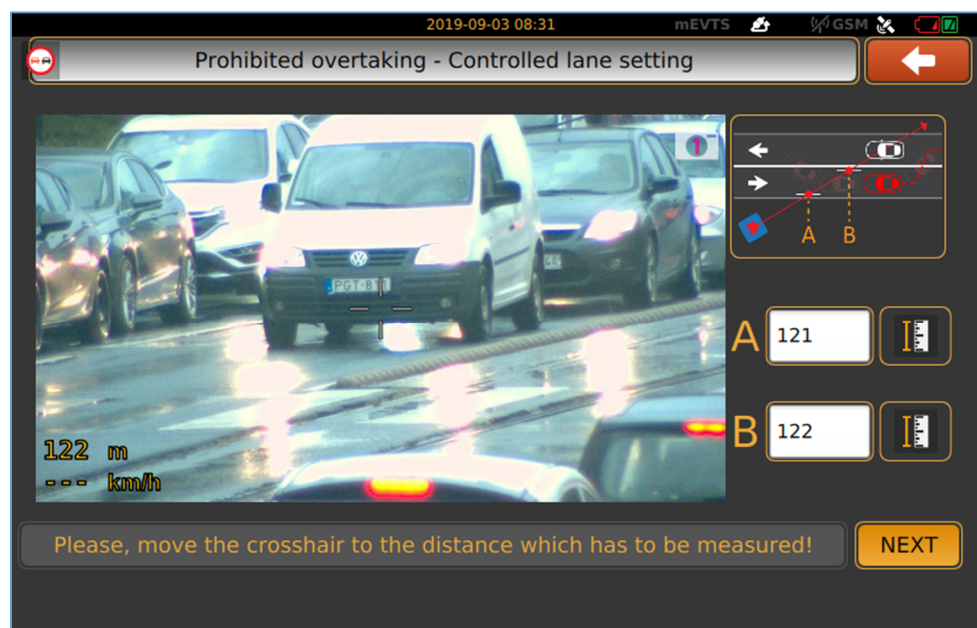


Category: before targeting, it must be set to the appropriate vehicle category. The followed-up vehicle being tracked and judged by the category indicated on the button.

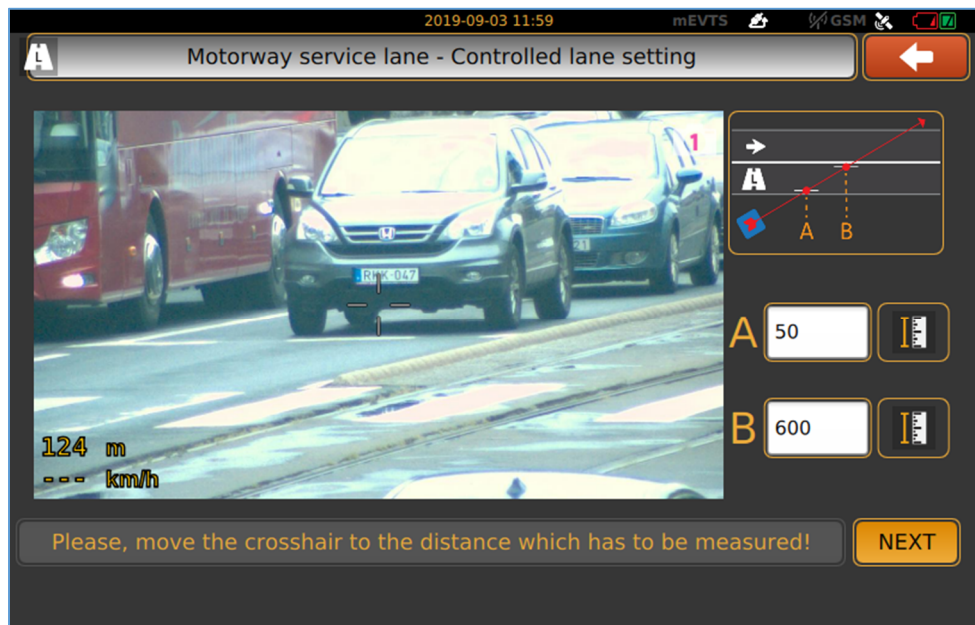


Interrupt follow-up: This button will appear if the target vehicle speed has exceeded the documentation speed limit for the selected category. Touching this button will stop the current follow-up. The maximum duration of follow-up is 30 seconds. The button indicates the remaining time. The button disappears when tracking is interrupted.

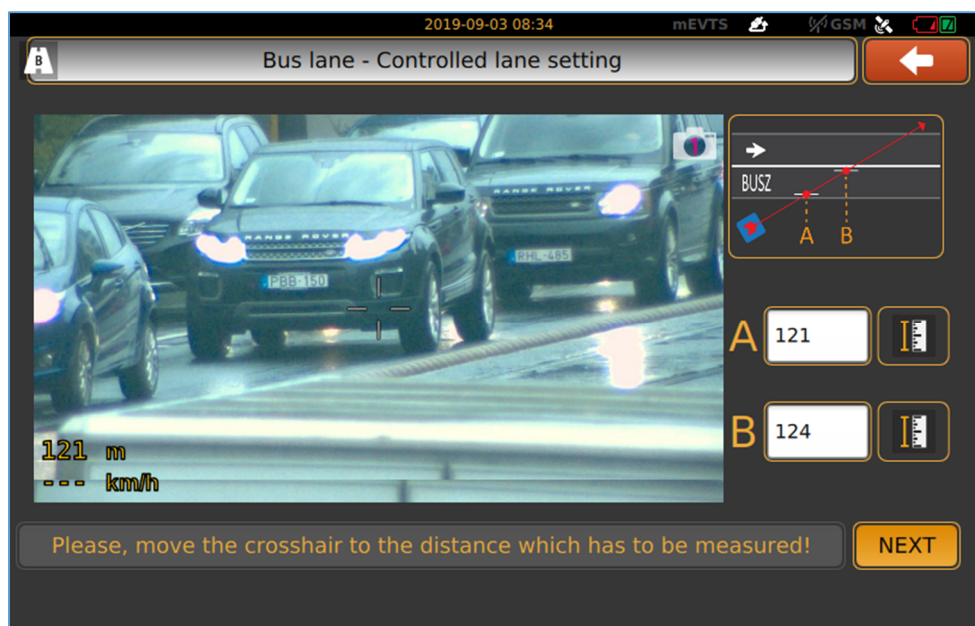
- **Vehicle monitoring:** creating an event of all passing vehicle with number plate, nationality, vehicle class, speed and distance.
- **Vehicle counting:** counting all passing vehicle. It can only be used together with "Automatic speed measurement" and "Vehicle monitoring" function.
- **ADR:** recognizes trucks which transport of hazardous materials
- **Prohibited entry:** monitoring vehicles driving in a restricted area. Controlled traffic direction and vehicle class have to be chosen during the setup of the function.
- **Prohibited overtaking:** monitoring prohibited barrage lane crossing. To set controlled lane, move crosshair to the "A" point as it shown on the figure and press button next to "A" point to measure distance. Move camera to the "B" point and press button next „B" point.



- **Motorway service lane:** it is inspecting vehicles passing in the service lane. Setup is the same as described as "Prohibited overtaking".



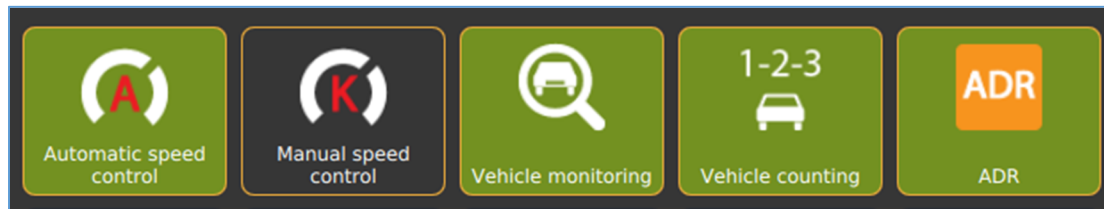
- **Bus lane:** Same method as "Motorway service lane".



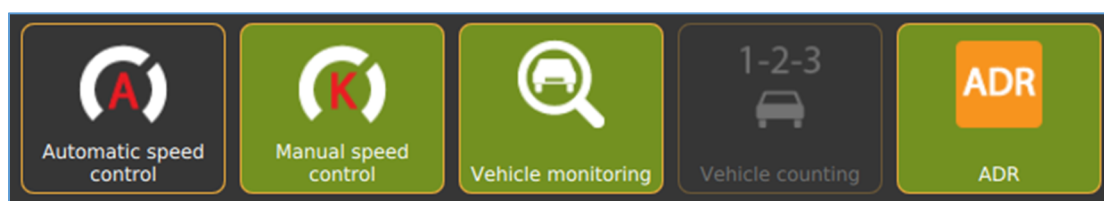
CONTROL FUNCTIONS PAIRING

1. Top line

„Automatic speed control”+”Vehicle monitoring”+”Vehicle counting”+”ADR”

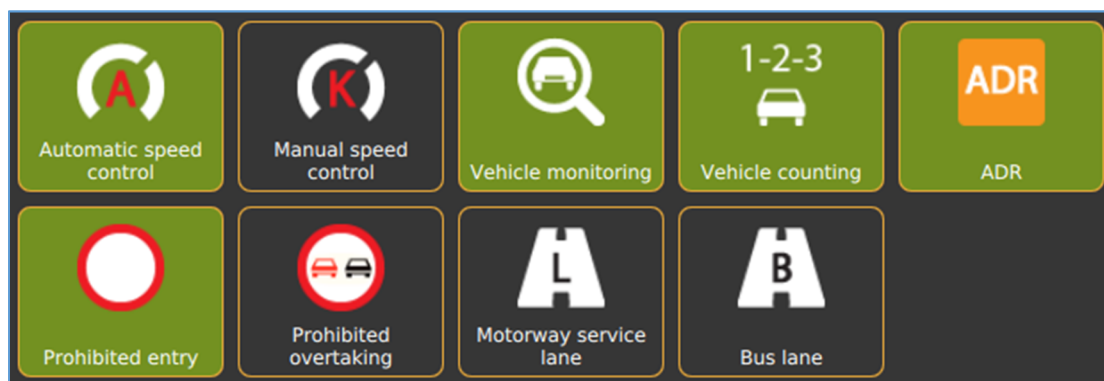


„Manual speed control”+”Vehicle monitoring”+”ADR”



2. Bottom line

„Automatic speed control”+one function from the bottom line



USAGE OF TRIPOD

1. SET UP OF TRIPOD

1. Release fastening (3 pcs) placed bottom of the tripod (It keeps 3 legs together).
2. Unlock quick fasteners on the legs (3 pcs).
3. Pull out legs till maximum or till proper height.
4. Lock quick fasteners.
5. Release quick fasteners on the upper part of tripod.
6. Adjust height and lock patterns.
7. Undraw legs until horizontal spreader is unbending.

Hint

You can adjust width of tripod with the fastening of horizontal spreader.

8. Lock screw on horizontal spreader (3 pcs).
9. Slide ARH CAM S1 on the rail of tripod.

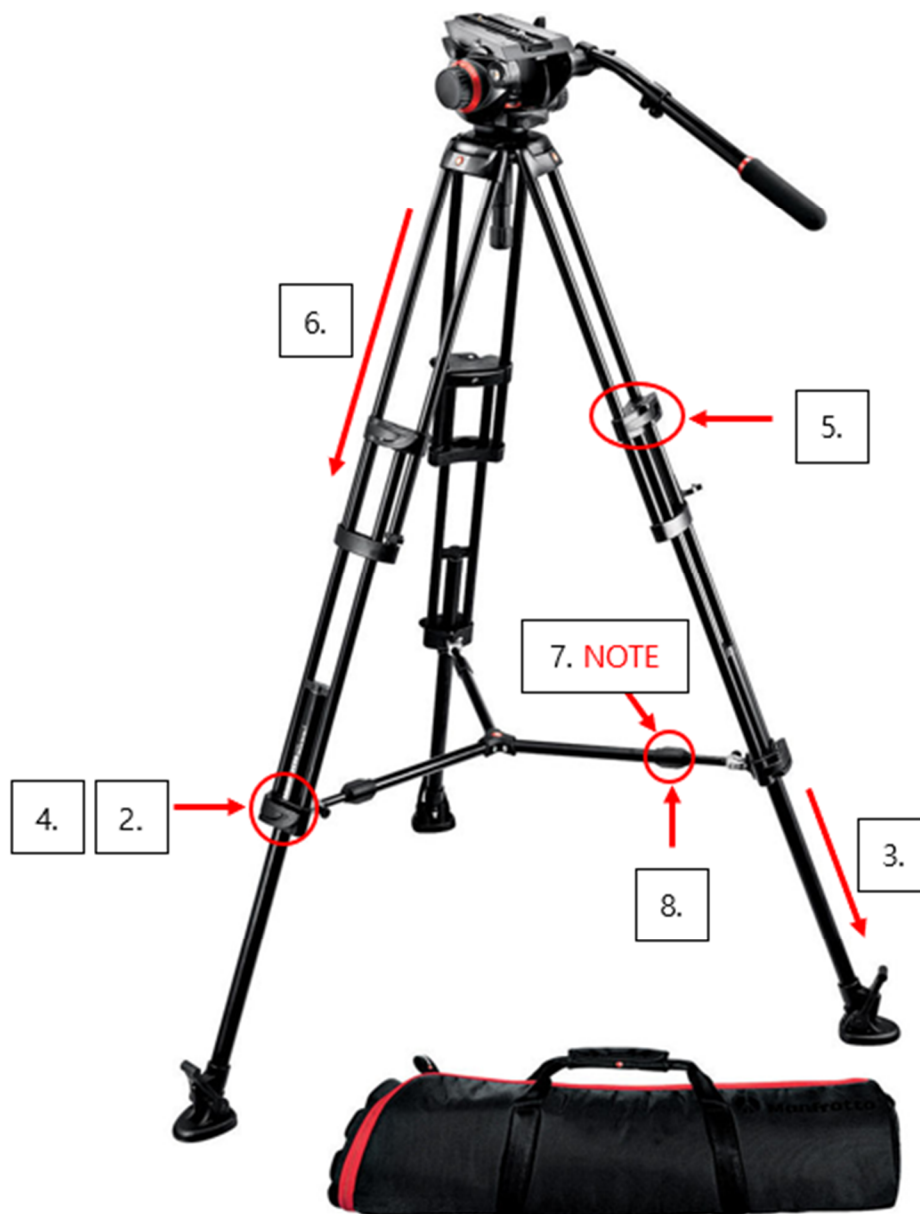
Note

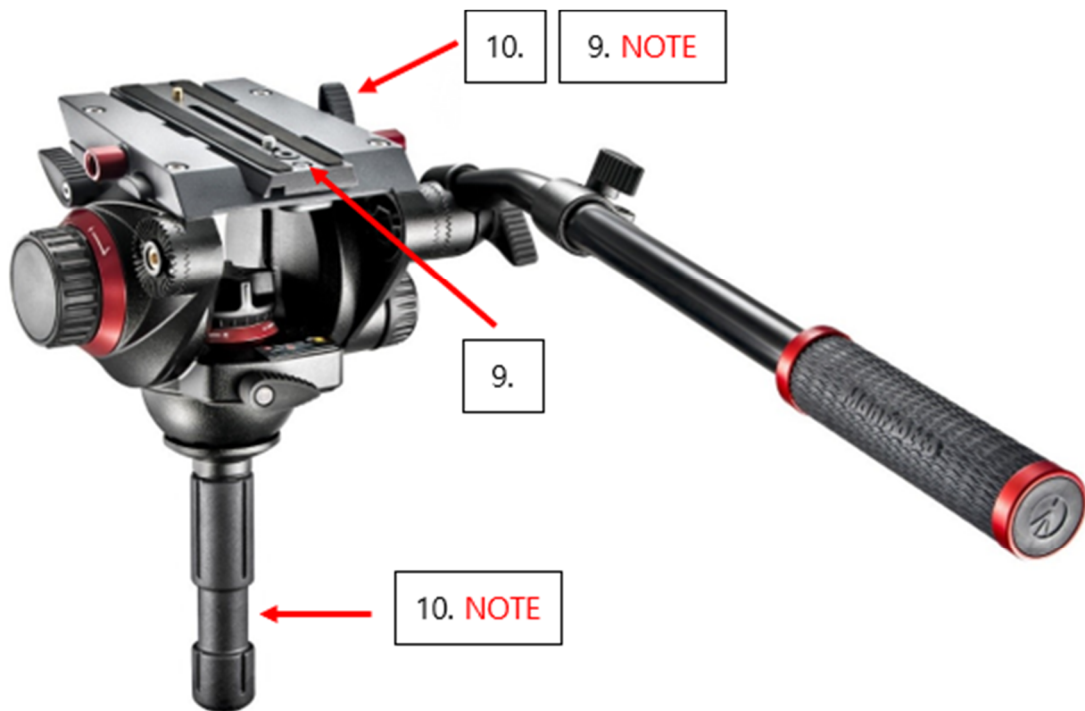
Rail of tripod contains a fixing screw on one side, it must be released before slide the camera on from the back side. Clicking sound confirm right position of camera on the rail.

10. Ran fixing screw of the camera.

Note

You can position ARH CAM S1 vertically and horizontally by release level handle under the rail of tripod.





2. FOLD UP OF TRIPOD

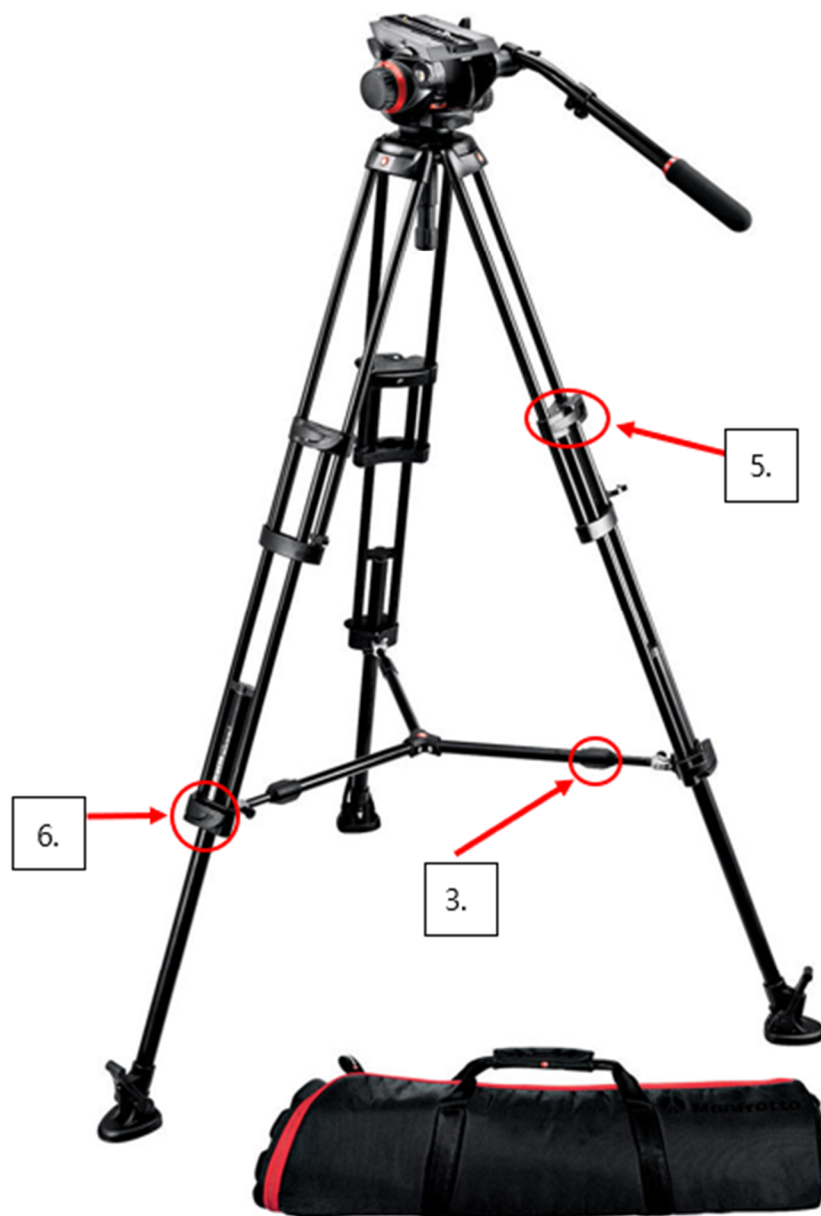
1. Release knob of the camera.
2. Pull off camera from rail by pressing the auto lock safety pin on the left side.
3. Release screw on horizontal spreader (3 pcs).
4. Fold up legs.

! Important

Level handle under the rail of tripod must be straight when fold it up in order to fit in the hole between legs.

5. Release lever-locks on the upper part of the tripod, push part together and fix locking.
6. Release fastening, push legs together and snap fixing locks.





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ARH Technical Support System (ATSS) is designed to provide you the fastest and most proficient assistance, so you can quickly get back to business.

For further technical information about our products, please visit our official website.

Information regarding hardware, software, manuals and FAQ are easily accessible for customers who previously registered to enter the dedicated ATSS site. Besides offering assistance, the site is also designed to provide maximum protection while managing your business information and technical solutions utilized.

New User

If this is your first online support request, please create an account by clicking on this [link](#).

Returning User

All registered ATSS customers receive a personal access link via e-mail. If you previously received a confirmation message from ATSS, it contains the embedded link that allows you to securely enter the support site.

If you need assistance with login or registration, please contact atsshelp@arh.hu for help.