

GPS *auto* Cam 1 G

automotive -video / audio / G-sensor/ GPS- position- driving recorder

This **user and installer manual** describes a camera and recording device to be mounted in a car.

As long as this *auto*Cam-device is switched on while driving, it continuously records its video shootings together with the GPS-positions, G-acceleration values (brake, curve, pot-whole...) as well as date and time.

If one of the 3 (adjustable) thresholds of the G-sensor is being surpassed, automatically the device stores a video-clip consisting of the last 20 seconds and the following 20 seconds.

And at any time video-clips with the GPS- and G-values can be memorized manually.

These internally memorized files (up to 1 GB) can be quickly and automatically saved on USB-memory-stick, or they can be viewed on PC by using the software *auto*Cam-manager (implied on the device).

The *auto*Cam-manager displays the video-clips with the G-sensor-data, and, if the PC is *online* in Internet, the GPS-positions concerned are shown in *Google*-maps.

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ECE type-approval

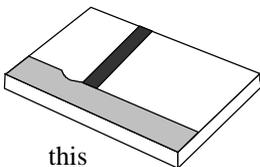


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1. components supplied

If any component is missing or damaged, please contact your sales



this manual



*auto*Cam camera-recorder



USB cable



12V-wire (cigarette – lighter plug or +15/-31 – connection)



tape-fitting-pads



AV cable



1. **camera lens:** should have unlimited view (onto the road, in driving direction)
2. **bow:** in this cradle the camera device gets fixed and aligned onto the windscreen
3. **fixing screw:** 2 screws to fasten tightly the camera device into the cradle-bow
4. **12V / 24V-input:** to insert the power cable supplied (to feed dc = direct current)
5. **USB-stick port:** to insert a USB flash memory stick (to back up the recorded videos)
6. **USB-PC port:** to connect *autoCam*-device to a PC by means of the USB-cable supplied
7. **AV out:** to an external monitor (via AVI cable supplied) in order to play recorded videos
8. **record-button:** to start manually at any time the recording of the current shootings
9. **play button:** to play the recorded event videos on a monitor connected by AVI-cable
10. **power-LED:** provides information about power-supply, recording-mode, and....
11. **eco LED:** informs about status of device, eco-evaluation of driving efficiency, and....

3. main features of the *autoCam* device

- **recording / memorizing:** video, audio, shock/impact (G-Sensor), GPS-position, date
- **event recording:** memorizes a video-clip that contains the recordings of the 20 seconds (each) before and after an event like sharp breaking, excessive cornering, impact or...
- **manual recording :** ...by pressing the record-button a video-clip (20 + 20 seconds) can be memorized at any time
- **advanced video quality:** ...is provided by using the H.264 video encoding format
- **automatic back-up of videos:** by download onto USB-stick (= memory-extension)
- ***auto Cam-Manager:*** (already downloaded in the device) can be started immediately on almost every PC, which is operated by a recent Windows system, and which has a USB-2-port. Its menu appears as far as possible in the language of the OS of the PC, otherwise in English, and allows to view, map, analyze, convert, and save recorded data and files....
- **customizing *auto Cam-manager:*** ...enables individual choice of those adjustments and G-sensor-thresholds (which the owner wants to trigger event-recording))
- **eco-score:** in order to enable improvement of driving efficiency. the result of continuous evaluation of currently recorded G-sensor-data is indicated by the colour of the eco-LED.

4. use *autoCam*-device: event recording

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1. Power the *autoCam*-device, that is switch on ignition, and – if the device is not connected to ignition-plus - insert the power-cable into the cigarette-lighter-plug.
2. A beep sounds. The power-LED lights on red. The eco-LED briefly shows its various colors and light on then white (or in another color). The device is continuously recording now !
3. In case of an event (like sharp braking, rapid cornering, sudden impact or...) **a beep and the red flashing power-LED** confirm that **a video-clip (record-file) is saved automatically**, which consists of the 20 seconds before and 20 seconds after this event.
4. Furthermore **at any time** the current recordings can be saved in similar manner (as a file of 40 seconds video-clip) by pressing the big **record-button**.

 Continuous recording runs as soon as and as long as the device is powered. The most recent constant recordings are stored in the internal memory of the *autoCam*-device.

AVI-connection to a monitor

Video-files can be displayed in a suitable car-TV- or car-navigation-device. Ensure to display recorded data only after having parked the car in a safe place!

1. Use the AV-cable supplied to connect the AV-output of the *autoCam*-device and the AV-input of the monitor-device, which should be switched ON before connecting.
2. **Press play-button** (between the two LEDs) of the *autoCam* device. Power-LED turns off during AV-play operation, and eco-LED lights on yellow.
3. The event-videos are displayed. In order to display the next event recording file, press PLAY button once more or again and again, until the desired video clip is displayed.
4. Pressing the big record-button will stop displaying the videos (confirmed by a beep sound).



- NOTE: In order to start manually the saving of the current recordings, record-button must be pressed now a second time.
5. After all recorded video clips have been displayed, *autoCam* recorder automatically switches back to recording mode..

back-up onto USB-memory-stick

Video-files recorded in the *autoCam*-device can be easily, quickly and **automatically saved onto a USB stick** (flash memory).



-  Memory size of USB stick should be **bigger than 1GB**. USB memory must be formatted with FAT32 or FAT16, NTFS is not supported. The *autoCam*- recorder may not be compatible to any kind of USB memory stick.
1. Park the car safely. Insert a USB flash memory into USB-stick port of the *autoCam*-device: Power-LED starts red flashing, and the blue **eco-LED flickering blue**, as long as the automatic download onto the USB-stick is running.
2. When **USB-backup is completed**, the power-LED turns off, while the **eco-LED flashes green and beeps sound**.



-  If device sounds and power-LED flickers red while eco-LED lights on red, download has failed, and backup must be tried again, may be now with another USB flash memory. At any time by pressing of the big record-button can stop the download to USB-stick, and *autoCam* directly starts recording. (Of course, thus backup has not been completed.)
3. Plug out the USB-stick. Connect it to a PC to play and analyze the downloaded video files.

USB-connection of *autoCam* to a PC

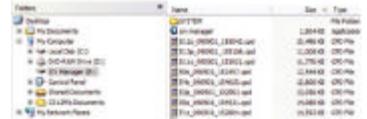


1. Connect *autoCam*-device and PC by the USB-cable supplied.
2. A beep sounds and the power-LED lights on red, while the eco-LED after flashings in several colors finally lights on blue to indicate that the device is connected to the PC.

 If the **USB-port** of the PC **does not supply enough power** for the *autoCam*-device, it is possible to feed the *autoCam*-device, when it is already connected by USB to the PC, externally with 12V-dc (by means of the power-cable).

 As long as the *autoCam*-device is connected by USB to a PC, all recording functions are blocked. Only management of recorded files is possible, like copy or delete file....

3. The PC recognizes automatically the *autoCam*-device as an **external storage device** (removable memory). Simply select the *autoCam*-directory. Several files should become available.



 The *autoCam*-software requires **recent Windows-operating systems** (like XP, Vista, 7). Older Windows-OS (like ,95, ,98) may require a driver software. Other OS (like MAC, Linux) normally do not support the *autoCam*-software.

4. Start the ***autoCam*-manager** (.exe file):
It enables to view, analyze and manage recorded data and files, and to select in its SET-UP the adjustments individually preferred. (Advices to the operation of the *autoCam*-manager are on pages 6 and 7.)



eco-evaluation of driving efficiency

The colors of the der eco-evaluation hall help to improve the safety and efficiency of current driving manner. Again and again the *autoCam*-software evaluates the recorded data of the G-sensor and indicates its currently evaluated eco-score by means of the color of eco-LED:

- If sharp brakings, rapid cornering... have been avoided, the driver receives the best eco-score (80 - 100), which is signalized by the eco-LED lighting on green.
 - If G-sensor records few events only, the blue eco-LED indicates a medium score (60 – 80).
 - If many events have been recorded, the red eco-LED signalizes the lowest score (under 60).
- Of course, the color of the eco-LED can change in case of a modified current evaluation.

power off properly the *autoCam* -device

1. Stopping the engine also switches off the device, if it is connected to ignition-plus..

 Otherwise the **device must be switched off manually**, when the car is parked:
Ensure to plug out the power-cable, in order to avoid discharging (appr. 0,2 A per hour) of the car battery.

In order to avoid loss of recorded data, please follow the instructions below:-

2. When saving of current recordings has just been started (by pressing the record-button or by event-triggering), wait for 20 seconds to complete the recordings before powering off.
3. Do not power off during USB-stick back-up! Wait and ensure that the green flashing eco-LED confirms that USB-memory back-up has been completed. 

5. installing the *autoCam*-recorder

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1. Connect the *auto Cam*-device to a PC by means of the USB-cable supplied, Start the ***auto Cam*-manager**. Click onto **set-up** button (right bottom of screen). Click **time-setting** to synchronize date and time.



2. Park the car in a bright, flat place. Switch off ignition.

3. **Select the area** in the driver cabin, where to adhere the *autoCam*-device (its bow) at the windscreen, for example at the top beside or behind the central rear mirror (or above the dashboard).

- Ensure that the device in its desired position does not interfere with the driver's sight !
- Ensure that the device does not restrict the possibilities to adjust the mirror!
- Do not confine the camera lens view by reflections, blocking things or by tinted glass.
- Ensure that there is enough space to adjust and turn the camera device.
- Ensure that there is enough space to insert a USB-stick into the fixed, aligned device !



4. **Clean and disgrease thoroughly the surface area** selected. Use **non-aggressive detergents** only !

5. Do not forget to **remove the plastic cap from the camera lens** !



6. Fix the cradle-bow for the *autoCam*-device onto the selected and thoroughly cleaned surface by means of the **double-sided tape** properly and tightly.



Align the camera horizontally, with the lens looking to the front.

Tighten both fixing screws properly in order to avoid any movement of the camera while driving.

7. **Lay and fix the power-cable** up to the *autoCam*-device, using the fixing-pad-tapes to fasten the cable on its way.



8. **Connect the power-cable** to 12V or 24V dc (direct current)...
...either to the **cigaretten-lighter-plug**,
...or the **ignition plus** (red to +15) and **ground** (blue to -31).

 When the car has been parked, ensure always and each time to disconnect the *autoCam*-device from its power supply (in order to avoid discharging of the car battery) !

9. Switch on ignition and start the engine. A beep sounds, and both *autoCam*-LEDs must light on red. When the eco-LED soon afterwards displays other colors, the device starts its continuous recordings (video, audio, G-sensor-data, GPS-positions).

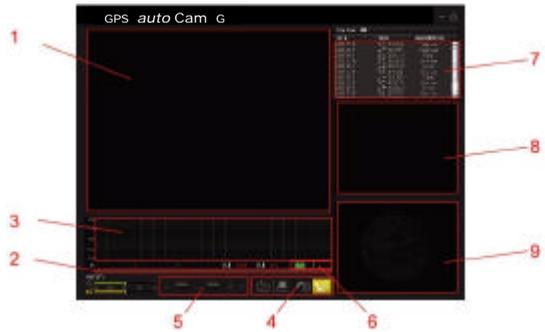
After a test-ride check at PC the recorded video-clips, whether the camera is well aligned and adjusted, whether it records well, whether proper G-sensor thresholds are selected...

7. use *autoCam-Manager* on PC

Connect the *auto Cam*-device to a PC by means of the USB-cable supplied (or connect a USB-stick to PC, if the files of the device have been copied to it), open its directory folder, and click onto and start the file ***auto Cam manager.exe***.

autoCam PC-menu

1. monitor displays the selected video file
2. time bar of the selected video-file
3. G-sensor graphs (acceleration values measured according to time-axis):
X (white): to the right or left
Y (red): towards up or down
Z (green): nach oben oder unten
4. tool buttons: see symbols
5. play control buttons: see symbols
6. eco-evaluation of driving efficiency
7. file list shows the video-files in the directory-folder
8. pre-view window shows a still of the selected video
9. GPS-map displays the position (the way) of the car as recorded during the video-clip.



! **GPS-mapping** is available only, if and as long as the **PC is online in Internet !**

! If the *autoCam*-manager cannot recognize and automatically take over the **country-language selected in the PC operating system**, the menu will be displayed in English language.

! Before using first time the *autoCam*-device, in the **set-up a time-setting** is absolutely required.

In case of a video-file being displayed, the *autoCam*-manager presents on the PC-screen the following view:



symbols' definition

	start SET-UP of <i>autoCam</i> device connected to PC
	save present image (still) of video by JPEG
	print present image (still) of video clip
	save and convert recorded video files
	control video playback speed
	control volume of loudness
	play video clip (forward)
	play video clip backward
	pause playback
	stop playing video clip
	move a frame backward
	move frame forward
	open directory (file list) of video files on the PC
	close <i>autoCam</i> manager

play, save, convert video-files

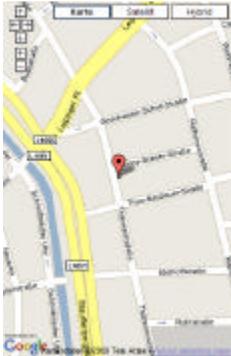
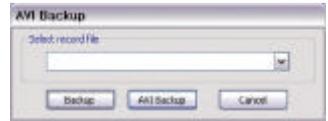
Select a video-file out of the file list (window right side) by **double-click** and wait briefly to **view it**,. (Note: One click only will display only one image in the pre-view window.)



Video-files being stored in the PC can be found by clicking onto the directory-symbol, in order to load them into the file list window, and to view them.



Click to **AVI-BackUp** symbol on the menu bar and select a file to save it in a harddisc-directory either as video like it is or converted to AVI.



GPS-mapping in the autoCam-Manager

The position of way of the car are displayed on a road map (while the video-file is running).



GPS-mapping is available only as long as the PC (on which the *autoCam-manager* is running) is **online in Internet**.



If GPS-reception was poor while recording, or if the PC has a too slow connection to Internet, the map may not be shown.

In order to move this map, press corresponding arrow key.

autoCam-manager SET-UP

Connect *auto Cam*-device (by USB-cable) to a PC, start the *auto Cam*-manager, and click onto the **Set-Up**-symbol (bar at the bottom, right). After few seconds the SET-UP menu appears, which enables **several adjustments**, which finally can be stored in the *autoCam*-device.



resolution	...of the video image is fixed momentarily to: VGA 640 x 480
image quality	...select: very low / low / normal / high / very high
frame per sec.	...select between 5 / 10 / 15 or 30 stills per second
G-sensor-Sensitivity-thresholds (X-, Y-, Z-axis)	...select thresholds between 0 (very sensitive) and 5 (most dull) , which automatically trigger the saving of a video-file (40 seconds): X (0 - 5) : acceleration to the right or left (cornering) Y (0 - 5) : acceleration to the front (braking) or backward Z (0 - 5) : acceleration upwards or downwards (pothole)
event alarm	confirm the storage of an event-recording by beep sound: on / off
button sound	confirm the pressing of a button by beep sound: on / off
audio	... select: voice recording: on / off
A/V-output	...select: type of monitor NTSC or PAL
time setting	date and time are automatically synchronized with PC's time and date
flash format	formats the device' internal memory - all recorded files will be deleted.
factory setting	restores all options to the ex-works-settings of the manufacturer.



The G-sensor-thresholds (we recommend to adjust between 0 and 2) define, which events will be stored as video-files, whereas image-quality and -frame determine, how many video-files can be stored in the *auto Cam*-Gerät device.

CPU	CPU	Cupid ASIC chipset
	Performance frequency	133 MHz
G-sensor	internal 3D G-sensor	detection of braking, collision, rapid curving...
GPS	intern	integrated on the recorder's PCB
	sensor	CMOS
camera	lens	high quality precision lens
	resolution	640 x 480
	aperture angle	64.8° (V.) x 92.8° (H) x 125.5° (D)
	sensitivity	0.8 lux
microphone	type	C-microphone
	sensitivity	-38dB
internal memory	Nand flash memory	1GB
interfaces	USB-port to PC	USB 2.0 (USB 1.1 compatible)
	software supported by...	Windows: 7, Vista32, XP (2000, ME, 98)
	USB-stick connector	USB 2.0 / single port / FAT 16/32 formate
	AV output	resolution 720x480 (selectable: NTSC / PAL)
temperatures	operating range	0°C ~ 50°C
power supply	voltage / consumption	12 V or-24 V / 200 mA
	via USB of a PC	5V
	via 12V-cable	to the cigarette-lighter-plug or to +15 (ignition-plus) and -31 (ground)
size / weight	camera-device	98 mm * 60 mm * 37 mm / 95 g

8. important advices and directions

1. Warranty will be cancelled in case of any attempt to open or manipulate the Cam device.
 2. In case of smoke or burnt smell unplug immediately the power cable.
 3. Avoid any direct contact of water with the device (may cause fire, electric shock or ...).
 4. Keep the device away from chemicals or detergents (may damage lens or surface or...).
 5. Fix the device tightly, and do not insert any foreign object into the device.
 6. Do not operate the device while driving , and do not touch the device with wet hands.
 7. Use only the power cable(s) supplied in order to avoid damage (fire or electric shock).
 8. Keep the lens clean, and avoid any restriction of its view by tinted glass, stickers, or....
 9. Around the camera try to aAvoid unnecessary objects or their reflections.
 10. Weak or glaring or suddenly changing light may cause bad quality of the recorded video.
 11. Accidents with very low shock or impact may not be recorded automatically.
 12. If and as long as power supply is disconnected, events cannot be recorded.
 13. GPS used for commercial purpose may have range errors of more than 15 (100) meters.
GPS reception depends on weather and environment conditions, and may take some time.
 14. Never forget: Unplug the power cable before leaving the car (to save the car battery) !
- This *auto* Cam recorder may not record all events, incidents or accidents.
 - In case of accident, the G-sensor may not recognize the shock, if the impact is too light. Then the *auto* Cam recorder will not automatically start event recording (video-clip).
 - As long as the *auto* Cam recorder is connected to a computer by USB, all its recording functions are not working. Only file operations are available such as file copy, delete, etc.
 - The manufacturer is not responsible in case of any loss of data.