CSI FIRMWARE DOCUMENTATION

PRODUCT DOCUMENTATION

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CSI FIRMWARE DOCUMENTATION

The custom csi firmware provides extensive and flexible control of your GoPro camera by re-instating the sc functionality on your HERO4 camera (previously available on the HERO3 cameras). This page outlines the co available and usage notes. Please review the instructions here on how to install the custom firmware to ena this. To purchase the custom firmware, refer to the product page here.

GETTING STARTED WITH SAMPLE SCRIPTS

The structure of the script is very simple. Just list out the settings/trigger commands you wish to undertake i text file. These will be executed when the camera is turned on.

Here is a simple example which does the following:

1. Changes the camera to photo mode
2. Presses the shutter button (thereby taking a photo since we are in photo mode
3. Allow a few seconds for the file to save to the SD card
4. Turns off the camera

```
mode photo
shutter press
sleep 5
shutdown
```

The easiest way to get started is to download a basic sample script to make sure everything is working with example and then modify it further using the commands below.Download the sample scripts from here (bo page).

SCRIPT COMMANDS

The following table lists the commands for the HERO4 “autoexec.csi” script file

Command	Argument	Description
sleep	time in seconds	Waits the specified time. Example: sleep 1.5
mode	photo video	Switches to the specified mode [Lite]
	photo video videoTimeLapse videoWithPhoto	Switches to the specified mode [Pro, Cloud]

	photoContinuous photoNight multiBurst multiTimeLapse multiNightLapse	
setting	list	Lists the available settings for a camera in csiLog.txt.
	(name) (value)	Sets the setting if not set already. A complete list of settin be found below this table. Example, “setting AutoOff 1”
shutter	press	Takes a picture or starts a video recording
	stop	Stop a video recording
wifi	on off	Turns WiFi on or off [Pro, Cloud]
wifiEnableMonitor	N/A	Checks if WiFi is disabled when USB data is plugged in. E after USB data connection is removed. Runs indefinitely. Cloud]
shutdown	N/A	Turns off camera (forced)
standby	N/A	Turns off camera, leaves WiFi on if it was on
videoLoop	videoTime diskFreeMB singleVideo(0 or 1)	Loops taking videos of the specified videoTime in second singleVideo flag is 1, this just takes one video and returns way, the command will delete old media until the amoun specified is free. [Pro, Cloud] [BETA]
upload	RouterSSID RouterMAC RouterConnectTimeout OverallTimeout (photos|thumbs) dropbox CAMDO_USERID	Uploads photos or thumbnails to a remote dropbox serv [Cloud] Eg: upload MyRouter_guest 11:AA:22:BB:33:C4 30 120 photo dropbox name@email.com_12345

Upload To Dropbox Notes:

restConnect notes:

IPchanger notes:

SETTINGS LIST

Every setting available through the menu system is accessible. The following lists all of the settings that can controlled via your script.

HERO4 Black

HERO4 Silver

TROUBLESHOOTING AND FAQ'S

Where can I download sample autoexec.csi scripts?

A few common scripts can be downloaded at the bottom of this page: http://cam-do.com/pages/csi-firmwar for-gopro-hero4-black-and-silver-cameras

The autoexec.csi script doesn't do anything.

Are you running the Lite version with WiFi active?

The Lite version of the HERO4 CSI firmware does not allow WiFi to be active. If WiFi is turned on, the script w on startup. The Lite version also has a maximum for 6 command lines with limited functions.

Have you installed the correct csiController file?

Look at the csiLog.txt file on the SD card. Error messages are shown there. For example, “Error: csiControlle match camera ID” would indicate that the csiController file on the SD card is not the one created for that car csiController is specific to the GoPro camera’s serial number.

Has the filename of the script been changed from “autoexec.csi”?

When installing or editing the "autoexec.csi" script, a lot of programs automatically convert the file into a sta document. If the file name is changed in any way, such as "autoexec.csi.txt", or “autoexec(1).csi”, the camera run the file on startup.

Are you using an SD card with the required read and write speeds?

The GoPro HERO4 camera requires an SD card with a minimum read and write speed of 30MB/s (U3) for rel operation. Our website has a link to an SD card speed tester to determine if your card has the required spe with the GoPro: https://cam-do.com/pages/sd-card-speed-tester If you need to purchase a new SD card, you strongly advised to use an SD card from the recommended list on GoPro's website, http://gopro.com/help/articles/Block/microSD-Card-Considerations. Use of cards not on the list, especially *Ultra* cards, will greatly increase your chance of trouble with your setup. Note that some SD cards have the product name as the cards on the list but only have a U1 rating. Make sure the SD card has a class 10 and U since underperforming SD cards can prevent proper functioning of your GoPro camera's features.

The reason the script has problems on slower SD cards appears to be in the timing of the boot sequence wh camera starts up. In some cases, the card is not ready to communicate with the camera at the time the cam for the script. As a result, the camera might crash or the script is not seen and the camera continues its boo as if no script was present.

Why does the WiFi script command not activate my camera's WiFi?

Are you using the Pro or Cloud version of the csiController?

The WiFi on/off commands are not available on the HERO4 Lite CSI firmware. You can purchase the Pro csiC **here**.

Have you paired your camera's WiFi signal with a device?

Make sure to first pair your GoPro's WiFi with your device before using the WiFi script command. If the GoPr connection has not been paired with any device or the camera's WiFi has been reset from the GoPro setup r will need to pair the camera before the WiFi script command will be able to turn on the camera's WiFi signal

The upload to dropbox script takes an image but no image is uploaded

Make sure to adjust the upload command line to contain your personal router information. Check the csiLo SD card to determine the error code.

Does your router provide the required WiFi connection settings?

The GoPro requires an open WiFi network (no password) that broadcasts a 802.11n signal at 2.4GHz and ma stable connection to the internet. Some routers, typically 3G & 4G routers, have a power/data saving mode to be disabled.

Is your router's WiFi signal in range of the GoPro camera?

The router should be placed as close as possible to the GoPro to ensure a strong signal. If you check the csiI the SD card after the GoPro has searched for a connection, the log will display all WiFi networks in the area signal strength of each network as seen by the GoPro camera.

Note that if the WiFi signal strength is weak, the GoPro camera may have difficulties transmitting to the rout although it can detect the WiFi network from the router. This is because the GoPro does not have as advanc WiFi antenna as most routers (or phones/computers). If the WiFi router location cannot be moved, you may secondary access point router to boost the signal closer to the camera.

Has your subscription to the HERO4 Cloud firmware expired?

A valid subsciption is required for access to the uploaded images.

What is the format of the Cloud firmware script's upload command line?

The format for the upload command line should be:

```
upload RouterSSID RouterMAC RouterConnectTimeout OverallTimeout (photos or thumbs)
CAMDO_USERID
```

`CAMDO_USERID` - is your email address followed by a five digit number that will distinguish the folder where images will be saved. This ID will be provided by CamDo after purchasing the Cloud Firmware.

`dropbox` - distinguishes that the command is for uploading an image to Dropbox.

`(photos or thumbs)` - if you want to upload the full sized photo, use the photos command. If you want to upload smaller thumbnails (approx 1000 pixels wide), use the thumbs command.

`OverallTimeout` - is the maximum amount of time in seconds that the camera will attempt to upload befo disconnecting. If the file is not transferred, it will be cashed and another attempt to upload will occur after a transfer.

`RouterConnectTimeout` - is the maximum amount of time in second that the camera will have to verify th connection to the selected WiFi network before the command line is skipped. If the connection is tabli image will be cashed and another attempt to upload will occur after a successful transfer.

`RouterMAC` - is the MAC address of the router. The MAC address for your particular router is normally availa router admin pages. Can also use arp -a command from the command line to find if not obvious in the rout interface. The format for the MAC address must be that every two characters of the address are separated v colon (:).

`RouterSSID` - is the wireless network's SSID. The SSID is case sensitive and cannot contain spaces or symbc the exception of hyphens (-) and underscores (_). Note that the wireless network must be an open network i security. You can hide the SSID and use MAC address filtering for security.

For example:

```
upload My-Router_guest 11:AA:22:BB:33:C4 30 120 photos dropbox name@email.com_12345
```

If I don't know my router's MAC address, how can I locate it?

The MAC address can typically be found in the router's programming menu. If you do not know how to locat router MAC address, it can be found using the GoPro camera. Save the Sample Dropbox script to the SD car camera on in the location where the camera will be deployed. The script will automatically run when the Go camera is turned on using Power/Mode button on the front of the camera. The Dropbox script should trigge GoPro to automatically take an image and turn the WiFi on to scan for available networks before turning off camera. The first camera trigger might only adjust the camera to the new setting, so if the WiFi was not activ before turning off the camera, the camera will need to be powered on a second time to activate the GoPro's scan for available networks.

Remove the SD card from the camera and insert the SD card into your computer to open the csiLog.txt file. csiLog.txt file should display a list of all available networks including the corresponding MAC address and str the WiFi signal as seen from the camera's location.

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