

# **en/CamCtrl**

13

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# Inhaltsverzeichnis

<b><u>1 CamCtrl</u></b> .....	<b>1/15</b>
<b><u>2 Technical specifications</u></b> .....	<b>2/15</b>
<b><u>3 Connections</u></b> .....	<b>3/15</b>
<u>3.1 Protocol</u> .....	3/15
<u>3.2 Video out</u> .....	4/15
<u>3.3 Status LED</u> .....	4/15
<u>3.4 Telemetry</u> .....	5/15
<b><u>4 Settings</u></b> .....	<b>7/15</b>
<u>4.1 Step 1 - Set transmitter</u> .....	7/15
<u>4.2 Step 2 - Connect the CamCtrl with:</u> .....	7/15
<u>4.2.1 Receiver</u> .....	7/15
<u>4.2.2 I2C</u> .....	8/15
<u>4.2.3 Servo OUT FlightCtrl</u> .....	8/15
<b><u>5 How to use</u></b> .....	<b>10/15</b>
<u>5.1 Expert function for "I2C" version</u> .....	11/15
<b><u>6 Waypoint flight</u></b> .....	<b>12/15</b>
<b><u>7 Data log</u></b> .....	<b>15/15</b>

# 1 CamCtrl

The *CamCtrl* is a control board for Sony Foto- and Video cameras.

The following functions are possible:

- trigger fotos
- start recording
- Zoom in/out (If supported by the camera)
- Camera turns on automatically (when it was in sleep mode)
- Prevents the camera from entering sleep mode
- analog Video signal via the 3-pol Molex plug  
(only with "LANC" possible and when the used camera sends a video signal via the "multi plug")
- Optional connection of an external status LED

## 2 Technical specifications

- Power 5V (via I2C or Servo connection)
- Dimensions 17,5 x 30mm
- Weight ~13g (I2C Version) ~15g (PPM Version)
- Cable length Multi cabel ~45cm

# 3 Connections



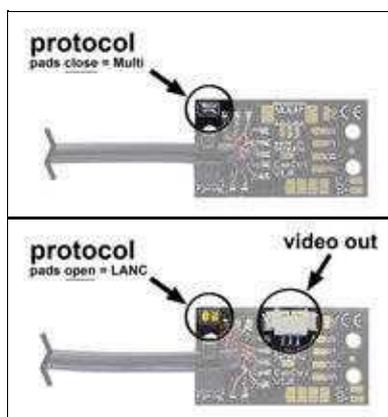
You can buy the *CamCtrl* as a "Servo" or "I2C" version.

You can connect the "Servo" version directly with e.g. a receiver.

The "I2C" version can be connected with a Molexkabel to a FlightCtrl V3.0 or a NaviCtrl V2.1.

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## 3.1 Protocol



Via a solder bridge on the *CamCtrl* we set the protocol.

Supported are the protocols:

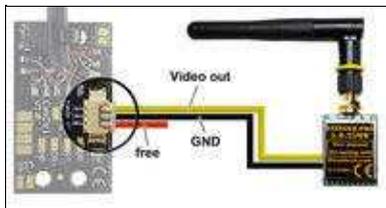
- *MULTI*  
(used from e.g. Sony A7, A6000, A5000, A5100 and other Foto cameras)

or

- *LANC*  
(used from e.g. Sony HDR-PJ810, HDR-PJ780, HDR-PJ740, HDR-PJ650, HDR-CX350VE, HDR-CX410, HDR-CX730, HDR-CX760)

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## 3.2 Video out



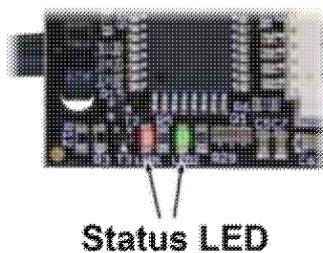
- The "LANC-Version" includes a Video out socket. Here you can connect directly e.g. a video transmitter.

### INFO:

-> Only with the LANC protocol some cameras sends a video via this socket. With the "Multi" protocol it is not possible to get a video from the camera!!!

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## 3.3 Status LED

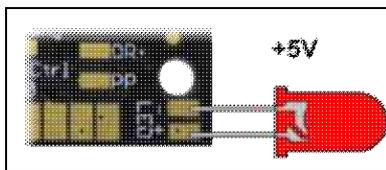


- Status message **green LED**:

- ◆ **OUT** => No power on the CamCtrl
- ◆ **ON** => CamCtrl is powered on and can be used

Status message **red LED**:

- ◆ **OUT**  
=> green LED is also off => no power on the CamCtrl
- ◆ **fast flashing**  
=> no camera connected  
=> Wrong protocol for the connected camera (LANC <-> MULTI)  
=> Camera is not supported
- ◆ **slow flashing** => Camera is detected and camera is "ON"
- ◆ **ON with short break** => Recording is active



- **Connect an external LED**

The optional external status LED indicates the same, then the red LED on the CamCtrl.

### 3.4 Telemetry



The "I2C" version sends the status via the Telemetry.

(via e.g. MK-Telemetry with Graupner HoTT transmitter or with the KopterTool)

The ads are:

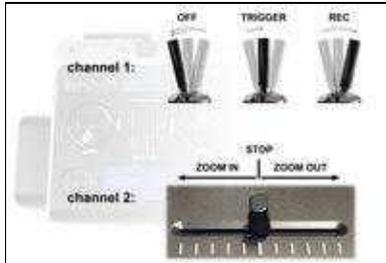
- c = camera is ready
- R = REC aktiv

- P = Video camera is in Photo mode (LANC Camcorders)
- ! = Camera is off, but connected
- ? = No camera connected
- 0-9 = number of recorded pictures
- Zoom is active

## 4 Settings

### 4.1 Step 1 - Set transmitter

To use the *CamCtrl* you need 2 free channels on your transmitter:



- **Channel 1** => Function *Trigger* and *REC*

For this function please use a 3-way switch on your transmitter.  
So you switch the function => OFF / Trigger / REC

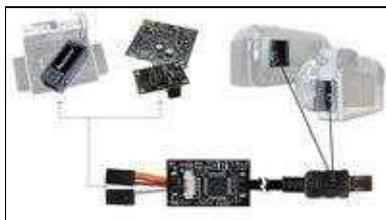
- **Channel 2** => Function *Zoom*

For this function please use a potentiometer on your transmitter.  
The center position of the potentiometer is then "rest position" = no zoom. Move the potentiometer to the left/right to zoom in / out. Center the potentiometer again to stop the zooming.

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### 4.2 Step 2 - Connect the CamCtrl with:

#### 4.2.1 Receiver

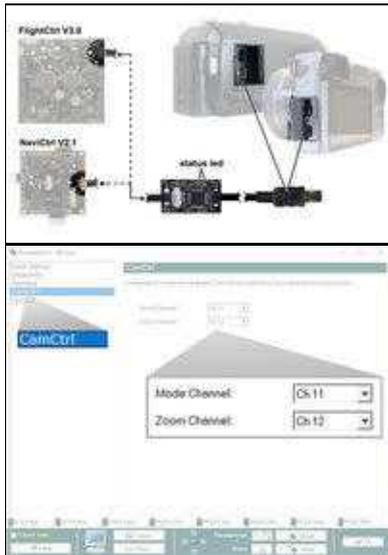


The version *CamCtrl* "Servo" can be connected directly with a receiver.

Connect the 2 servo plugs of the *CamCtrl* with the sockets of the receiver where the 2 set channels are.

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### 4.2.2 I2C



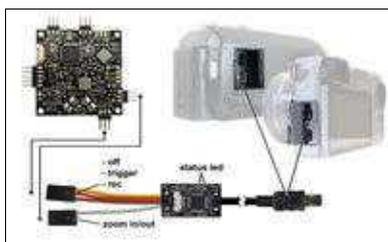
The version *CamCtrl* "I2C" can be connected directly with the I2C connection of the FlightCtrl V3.0 or NaviCtrl V2.1 .

With this connection you can also see the status of the *CamCtrl* via the telemetry.

Here you have to set the 2 used channels via the KopterTool.

If you use e.g. channel 11 and 12 on your transmitter you can set this channels in the settings under "CamCtrl" (see right picture).

### 4.2.3 Servo OUT FlightCtrl





The version *CamCtrl* "Servo" can also be connected with the "servo out" of the "FlightCtrl".

Connect the 2 servo plugs of the *CamCtrl* with the servo out 3+4 of your "FlightCtrl".

The 2 used channels have to be set via the KopterTool.

If you use e.g. channel 11 and 12 on your transmitter you can set this channels in the settings under "Camera". And here under "Servo 3" and "Servo 4". (see right picture).

## 5 How to use



Via the 3-way switch you use the function "Trigger" and "REC".

The positions of the 3-way switch are: **OFF / Trigger / REC**

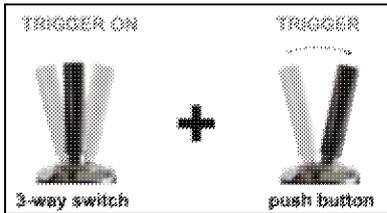
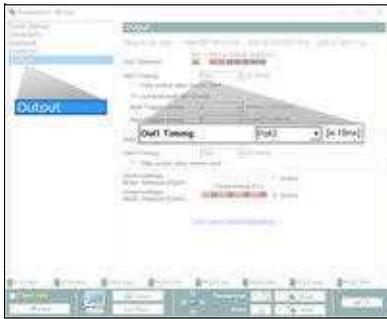
- **trigger a picture**

- Move the 3-way switch from position "OFF" to center.
  - ◆ *CamCtrl* "I2C" -> The camera will trigger one picture.  
(For more pictures - switch again from "OFF" to center)
  - ◆ *CamCtrl* "Servo" -> The camera will trigger one picture.  
(If the switch stay in the center position the camera will trigger all ~3 seconds a new picture)

- **Start Video REC**

- Move the 3-way switch from "OFF" position to the end position.
  - ◆ *CamCtrl* "I2C" -> REC is ON.  
(Back to the position "OFF" position will stop the recording)
  - ◆ *CamCtrl* "Servo" -> REC is ON.  
(Back to the position "OFF" position will stop the recording)

## 5.1 Expert function for "I2C" version



If you use the *CamCtrl* with **I2C** on your MikroKopter, you can use a special function.

For this special function we need a new free channel on your transmitter. And this free channel must be set to a push button.

Set this channel in the KopterTool under *Outputs* under "Out1 Timing". In our example we use channel 10.

When you place the 3-way switch from "OFF" to center the camera trigger one picture. <<BR> If the switch stay in center position you can use now the push button to trigger more pictures.

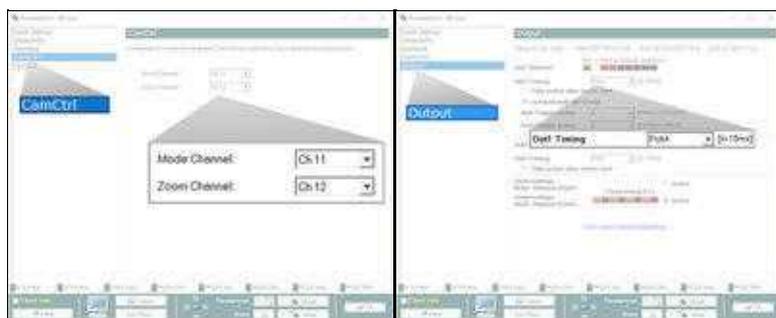
## 6 Waypoint flight

With the *CamCtrl* "I2C" or "Servo" you can also trigger automatically during a waypoint flight.

### INFO:

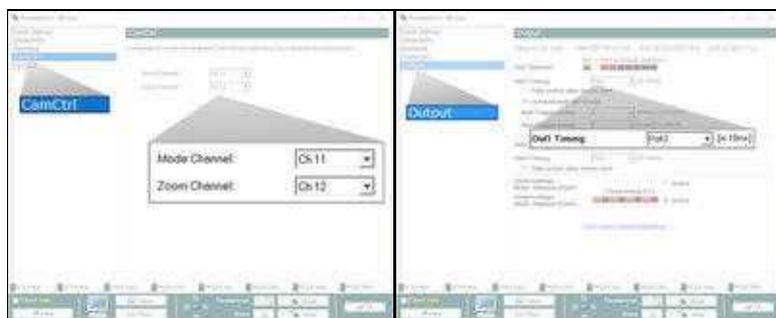
During a waypoint flight we have to activate the "Waypoint-Automatic" to trigger automatically. We can activate this automatic with a centered channel who is set under "Out1 Timing".

### Setting for



#### • *CamCtrl* "I2C"

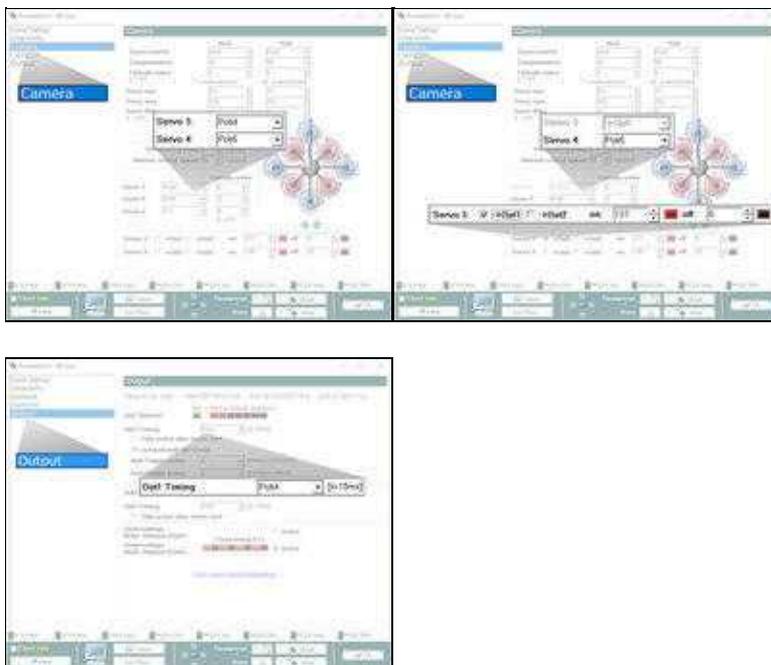
- ◆ The channel of the potentiometer is set under "Zoom Channel"
- ◆ The channel of the 3-way switch is set under "Mode Channel and "Out1 Timing"
- ◆ When you now center the 3-way switch during a waypoint flight, the "Waypoint-Automatic" is active



- **CamCtrl "I2C" + "Expert function for "I2C" version"**

- ◆ The channel of the potentiometer is set under "Zoom Channel"
- ◆ The channel of the 3-way switch is set under "Mode Channel"
- ◆ The channel of the push button is set under "Out1 Timing"
- ◆ Change on your transmitter the channel of the push button to center (when not in use) that the "Waypoint-Automatic" is all time ON

Help to change this channel: [Waypoint Automatic](#)



- **CamCtrl "Servo"**

- ◆ The *CamCtrl* is connected with the Servo OUT 3+4 of your FlightCtrl ([Link](#))
- ◆ The channel of the 3-way switch is set under "Servo 3"
- ◆ The channel of the potentiometer is set under "Servo 4"
- ◆ Beside "Servo 3" set a hook under "->Out1". Also set for "on" a 127 and for "off" a 0
- ◆ The channel of the 3-way switch is also set under "Out1 Timing"
- ◆ When you now center the 3-way switch during a waypoint flight, the "Waypoint-Automatic" is active

- **TIP**

With this setting the triggering is only possible during a waypoint flight! You can save this setting e.g. under "Parameterset 5".

Then you can switch the setting (parameterset) outside via your transmitter into the setting you need.

## 7 Data log

Here you can find the Data log: [CamCtrlProtocol](#)