

en/WaypointAutomatic

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LotharF
MikroKopter.de

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1 Info

If you use a Shuttercable ([Link](#)) you can also trigger a camera with a push button or a 3-way switch on your transmitter.

Tip

A description how to connect and trigger a camera with a Shuttercable you can find here: [ShutterCable](#)

A description how to connect and trigger a camera with a CamCtrl you can find here: [CamCtrl](#)

Also during a Way point flight you can automatically trigger your camera.

For this we need 3 things:

- Automatic
- Bitmaske (switching pattern)
- WP-Event

(The following settings are valid from SW version 2.00)

2 Automatic

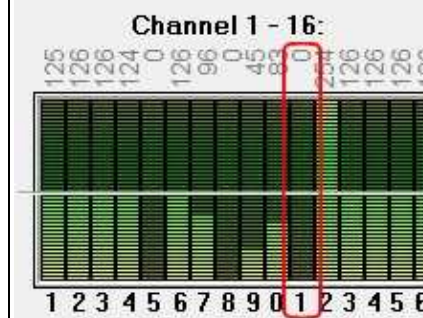
To trigger a Camera with a Shuttercable or an IR-Ctrl during a Way point flight, you have to activate the Automatic. This can be done with an 3-way switch or also with a push button.

2.1 Push button to trigger

If you use a push button to trigger the camera we have 2 positions =>

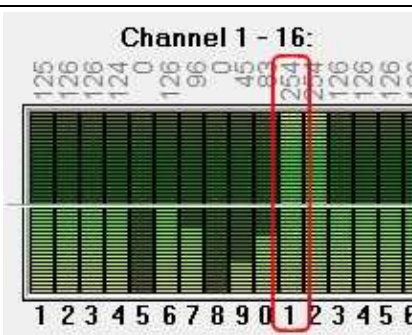


without
activation =
OFF (0)
Camera
will not
trigger.
(No
triggering
during a
WP-Event)



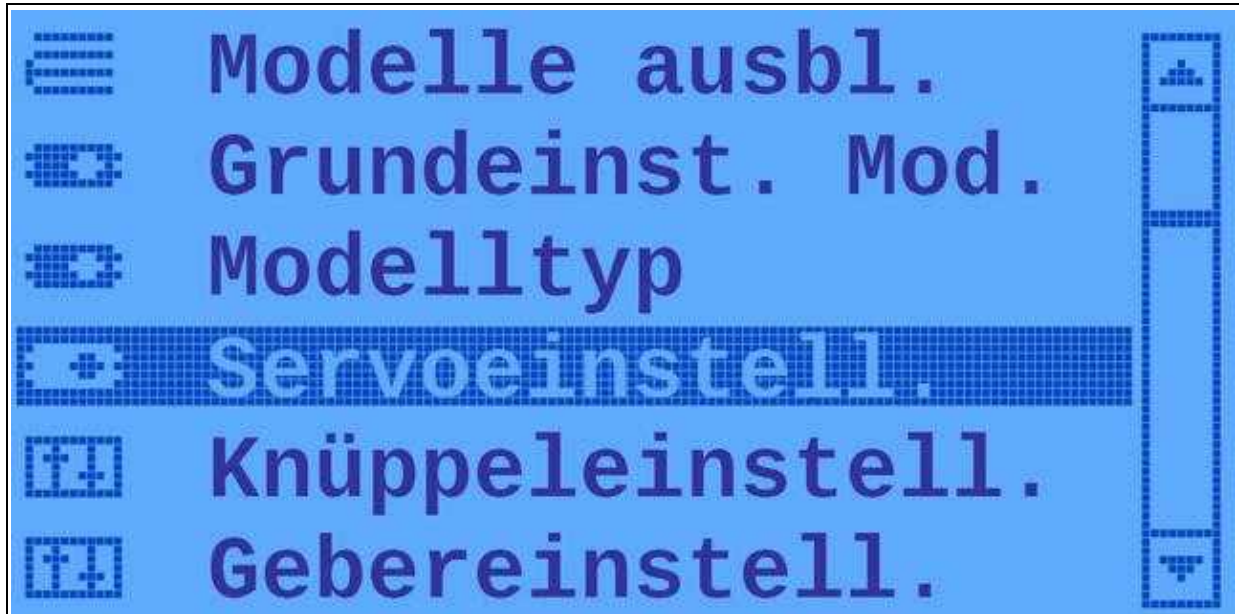


with
activation =
ON (254)
Trigger the
camera
manually

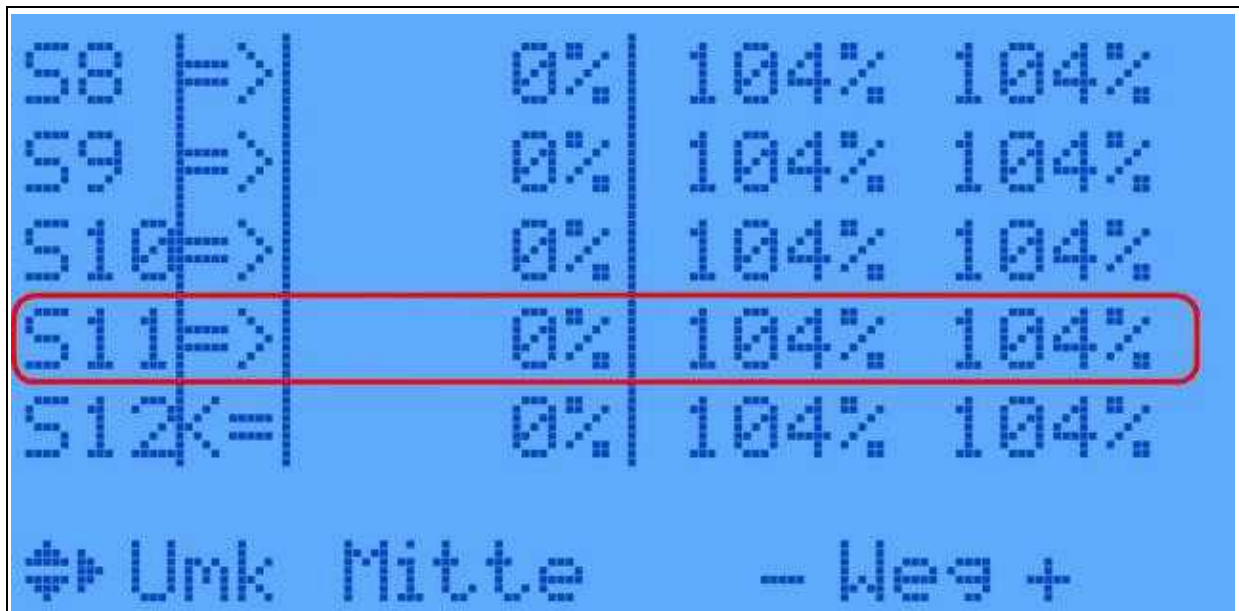


To use the Automatic during a Way point flight we have to change the settings for this channel on the transmitter. If you use e.g. a Graupner HoTT transmitter we find this setting under *Servo adjustment*: (in this example we use channel 11 to trigger the camera)

1. Change to *Servo adjustment*:



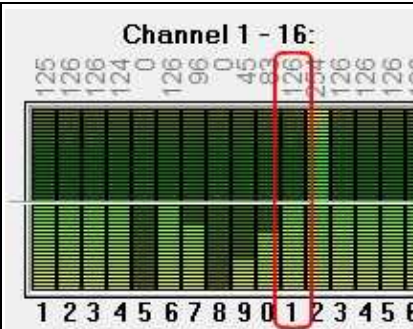
2. Change the left servo travel of this channel from 104% ... to 0%:



3. Now the Automatic is still activ.

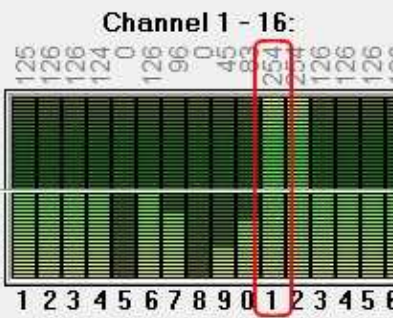


without
activation =
Automatic
(126)
Camera
will not
trigger.
(Automatic
triggering
during a
WP-Event)





with
activation =
ON (254)
Trigger the
camera
manually



Info

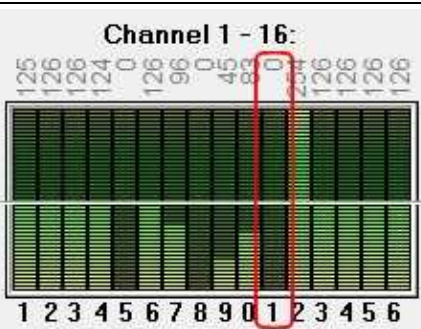
The Automatic can be still ON. During a normal flight you will only trigger the camera when you push the button. During a Waypoint flight the camera will trigger automatically.

2.2 3-way switch to trigger

If you use a 3-way switch to trigger the camera you can switch between OFF/Automatic/Trigger:
(in this example we use channel 11 to trigger the camera)

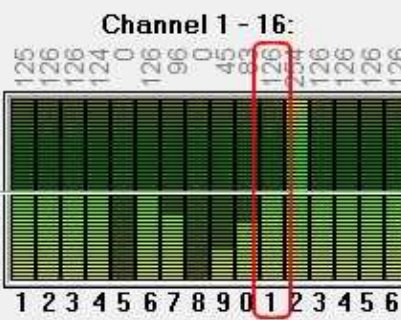


Position
1 = OFF
(0)
Camera
will not
trigger



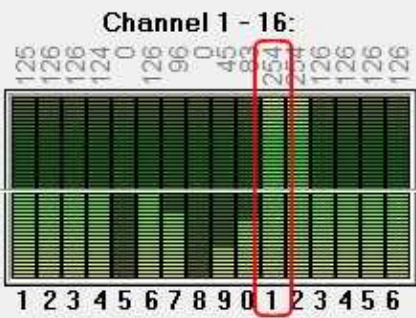


Position 2
=
Automatic
(126)
Camera
will not
trigger
Automatic
triggering
during a
WP-Event





Position 3
= An
(254)
Trigger
the
camera
manually



3 Bitmaske (switching pattern)

In the settings of the [KopterTool](#) under *Output* you have to set::

Parametersatz 3 : MK-Setting

Kanäle Konfiguration Stick Looping Höhe Kamera

Navi-Ctrl Navi-Ctrl 2 Ausgänge Verschiedenes Gyro

Benutzer Achskopplung Mixer-SETUP Easy Setup

Einstellung Ausgang1 / Ausgang2: J16 & J17 [FCV1.x] SV2.1 & SV2.5 [FCV2.x]

Klicken für Sequenzänderung

Ausgang1 Bitmaske: [Red squares]

Ausgang1 Timing: Poti7 [in 10ms]

☐ nur nach Start der Motoren aktiv

☒ mit WP-Event verknüpfen

AutoTrigger alle: 0 [meter]

Ausgang2 Bitmaske: [Red squares]

Ausgang2 Timing: Poti7 [in 10ms]

☐ nur nach Start der Motoren aktiv

Unterspannung Warn. Bitmask (Ausg1) festes Timing 0.1s ☐ aktiv

Unterspannung Warn. Bitmask (Ausg2) ☒ aktiv

[Gehe zur Servo Konfiguration...](#)

P1 [Ch 5]=0 P2 [Ch 6]=0 P3 [Ch 7]=0 P4 [Ch 8]=0
P5 [Ch 9]=0 P6 [Ch 10]=0 P7 [Ch 11]=0 P8 [Ch 12]=0

Parametersatz: ☒ Experte 3 Lesen Schreiben

OK Hilfe Laden... Speichern...

- *combine with WP-Event*
Activate this. So "Out1" will work automatically during a WP-Event.

- *Out1 Bitmask*
This one determines the switching interval of Out1

- *Out1 Timing*
Here you set the Poti1-8 (channel) of the used push button / 3-way switch.

Bitmask - explanation

With the 8 boxes of the Bitmask you will the switching sequence of Out1. How long a box will switch ON or OFF Out1 you will later set under the *WP-Event*.

Example:

Under *WP-Event* you set for example a value of 100 (100 x 10ms = 1 Second).

Each box under "Out1 Bitmask" is then working for this time (1 Second).

So if the boxes are activated as you can see in the picture (the first 5 ON and the last OFF) the switching output 1 will work like this:

1second "ON" - 1second "ON" - 1second "ON" - 1second "ON" - 1second "ON" - 1second "OFF" - 1second "OFF" - 1second "OFF"

Output 1 is also ON for 5 seconds and then OFF for 3 seconds.

Please note:

The program will processing the whole bitmask! If the *Waitingtime* for a Waypoint is longer, the bitmask will start again.

TIP

A DSLR camera can also trigger very fast. So you better use a short time for the WP-event (e.g. 6-10).

(See also [Switch Examples](#))

4 WayPoint Event

Each scaled [WayPoint](#) in the [MikroKopterTool](#)-OSD has a field "**WP-Event**" ([WayPoint](#)-Event). With each [WayPoint](#)-Flight you can trigger i.e. a camera automatically after reaching the appropriate [WayPoint](#).

If the Kopter reaches the [WayPoint](#) the Kopter stays there for the delay time set under the tab "Time". During the delay time the value will be transferred to the [FlightCtrl](#) entered under WP-Event.



Zeit	Radius	WP-Event	Steigrate	Höhe	Richtung
--	--	--	--	1	--
10	10	0	--	--	POI
10	10	50	--	--	POI
10	10	100	--	--	POI
10	10	200	--	--	POI
10	10	0	--	--	POI
10	10	0	--	--	POI
10	10	0	--	--	POI
10	10	0	--	--	POI

The functions and the settings of the [WayPoints](#) are described here:
[en/MikroKopterTool-OSD/MikroKopterTool-OSD](#)

5 Switch Examples

Let's take a few WP-Event values which are assigned for [WayPoints](#) and let's have a look to the function of the switch output in some examples.

How would the output switch with this values?

Zeit	Radius	WP-Event	Steigrate	Höhe	Richtung
--	--	--	--	1	--
10	10	0	--	--	POI
10	10	50	--	--	POI
10	10	100	--	--	POI
10	10	200	--	--	POI
10	10	0	--	--	POI
10	10	0	--	--	POI
10	10	0	--	--	POI
10	10	0	--	--	POI

! For Information:

The switching operation will be repeated as long until the set "Time" for the [WayPoint](#) is counted down.

Example: Is under "Time" a 10 entered the Kopter will stay for 10 sec. at that [WayPoint](#) and during this time the value of the WP-Event will be transferred.

WP-Event = 0

Is a "0" entered under WP-Event the function is OFF. The output will be not switched and a camera will be not triggered.

WP-Event = 50

Is a "50" entered under WP-Event is the time per casket 0,5 seconds ($50 \times 10\text{ms} = 500\text{ms} = 0,5\text{sek}$).

WP-Event = 100



Is a "100" entered under WP-Event is the time per casket 1 second ($100 \times 10\text{ms} = 1000\text{ms} = 1\text{sek}$).




WP-Event = 200




Is a "200" entered under WP-Event is the time per casket 2 seconds ($200 \times 10\text{ms} = 2000\text{ms} = 2\text{sek}$).



Here are some examples how you could switch the caskets (other patterns are possible):



Out1 Bitmask:		Click to change sequence:							Beispiel 1 (example 1)	
Bitmask =	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
WP-Event = 50	0,5sec on	0,5sec off	0,5sec off	0,5sec off	0,5sec off	0,5sec off	0,5sec off	0,5sec off	0,5sec off	

WP-Event = 100	1sec on	1sec off	1sec off	1sec off	1sec off	1sec off	1sec off	1sec off
WP-Event = 200	2sec on	2sec off	2sec off	2sec off	2sec off	2sec off	2sec off	2sec off
Out1 is:	ON ->	OFF ->						
							

Click to change sequence: Out1 Bitmask: 								
Beispiel 2 (example 2)								
Bitmask =	ON	OFF	ON	OFF	ON	OFF	ON	OFF
WP-Event = 50	0,5sec on	0,5sec off	0,5sec on	0,5sec off	0,5sec on	0,5sec off	0,5sec on	0,5sec off
WP-Event = 100	1sec on	1sec off	1sec on	1sec off	1sec on	1sec off	1sec on	1sec off
WP-Event = 200	2sec on	2sec off	2sec on	2sec off	2sec on	2sec off	2sec on	2sec off
Out1 is:	ON ->	OFF ->	ON ->	OFF ->	ON ->	OFF ->	ON ->	OFF
							

Click to change sequence: Out1 Bitmask: 								
Beispiel 3 (example 3)								
Bitmask =	ON	OFF	OFF	ON	OFF	OFF	ON	OFF
WP-Event = 50	0,5sec on	0,5sec off	0,5sec off	0,5sec on	0,5sec off	0,5sec off	0,5sec on	0,5sec off
WP-Event = 100	1sec on	1sec off	1sec off	1sec on	1sec off	1sec off	1sec on	1sec off
WP-Event = 200	2sec on	2sec off	2sec off	2sec on	2sec off	2sec off	2sec on	2sec off
Out1 is:	ON ->	OFF ->	ON ->	OFF ->	ON ->	OFF		
							




<div>Click to change sequence:</div> <div> <div>Out1 Bitmask:</div> <div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> </div> <div>Beispiel 4 (example 4)</div>								
Bitmask =	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
WP-Event = 50	0,5sec on	0,5sec off	0,5sec off	0,5sec off	0,5sec on	0,5sec off	0,5sec off	0,5sec off
WP-Event = 100	1sec on	1sec off	1sec off	1sec off	1sec on	1sec off	1sec off	1sec off
WP-Event = 200	2sec on	2sec off	2sec off	2sec off	2sec on	2sec off	2sec off	2sec off
Out1 is:	ON ->	OFF ->	ON ->	OFF ->				
							





<div>Click to change sequence:</div> <div> <div>Out1 Bitmask:</div> <div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> </div> <div>Beispiel 5 (example 5)</div>								
Bitmask =	ON	ON	OFF	OFF	ON	ON	OFF	OFF
WP-Event = 50	0,5sec on	0,5sec on	0,5sec off	0,5sec off	0,5sec on	0,5sec on	0,5sec off	0,5sec off
WP-Event = 100	1sec on	1sec on	1sec off	1sec off	1sec on	1sec on	1sec off	1sec off
WP-Event = 200	2sec on	2sec on	2sec off	2sec off	2sec on	2sec on	2sec off	2sec off
Out1 is:	ON ->	OFF ->	ON ->	OFF ->				
							

Exception

If you use for the WP-Event a value of 250, Out1 (or Out2) is during the delay (Time) at the WayPoint still on or off.

<div>Click to change sequence:</div> <div> <div>Out1 Bitmask:</div> <div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> </div> <div>Beispiel 6 (example 1)</div>								
Bitmask =	on	off	off	off	off	off	off	off
	on ->							

WP-Event=250 Out1 is:			
			
The switching output is at the WayPoint still ON and during the rest of the time OFF .			

Out1 Bitmask:		Click to change sequence: 		Beispiel 7 (example 1)				
Bitmask =	off	on	off	off	off	off	off	off
WP-Event=250 Out1 is:	off ->							
								
The switching output is at the WayPoint still OFF and during the rest of the time ON .								

6 testing and simulation at home

Look [here](#) for further documentation and how to test that without flying