

Seagull #MAP2 - Manual



General information

With Seagull #MAP2 you can easily trigger your camera – either with your R/C transmitter from the ground, or let your Flight Controller do the job.

Seagull #MAP2 is designed to connect your UAV mounted camera to an R/C receiver or Flight Controller and be able to trigger the camera either from a dedicated switch on your R/C transmitter - or automated by your Flight Controller for doing for example image mapping, agriculture analysis, 3D modelling and more.

Seagull #MAP2 features 6 modes:

AF-T (Autofocus-Trigger, 1 sec pre-AF then trigger)

IS-T (Instant-Trigger, instant trigger as soon as camera locks focus)

Camera On/Off (Turn camera power on/off – *only with Sony "Multi" cameras!*)

Timelapse (Shutter release with variable time interval)

Keep-alive (QX1 camera keep-alive function, prevents camera from shutting off)

Please read this manual thoroughly before connecting and configuring Seagull #MAP2 !

Configuring your Transmitter

Setting up Seagull #MAP2 could not be easier!

Simply select the channel that the device is plugged into and trim the LOW/HIGH values for that channel, until desired modes are met – refer to the table below:

Channel	State / Mode	Value	Value range
1, 2	Neutral	1500 μ S	1400 $\leftrightarrow$ 1600 μ S
1	AF-T	1300 μ S	1200 $\leftrightarrow$ 1400 μ S
1	IS-T	1700 μ S	1600 $\leftrightarrow$ 1800 μ S
1	Camera On/Off *	1100 / 1900 μ S	1000 $\leftrightarrow$ 1200 μ S / 1800 $\leftrightarrow$ 2000 μ S
2	Timelapse		
	- 1 Second	1375 μ S	1351 $\leftrightarrow$ 1399 μ S
	- 2 Second	1325 μ S	1301 $\leftrightarrow$ 1350 μ S
	- 3 Seconds	1275 μ S	1251 $\leftrightarrow$ 1300 μ S
	- 4 Seconds	1225 μ S	1201 $\leftrightarrow$ 1250 μ S
	- 5 Seconds	1175 μ S	1151 $\leftrightarrow$ 1200 μ S
	- 10 Seconds	1125 μ S	1101 $\leftrightarrow$ 1150 μ S
	- 15 Seconds	1075 μ S	1051 $\leftrightarrow$ 1100 μ S
	- 20 Seconds	1025 μ S	1000 $\leftrightarrow$ 1050 μ S
2	Keep-alive	1700 μ S	1600 $\leftrightarrow$ 1800 μ S
2	Camera On/Off *	1900 μ S	1800 $\leftrightarrow$ 2000 μ S
1 & 2	No signal **	n/a	0 $\leftrightarrow$ 1000 μ S / 2000 $\leftrightarrow$ ∞ μ S

* Only with Sony "Multi" cameras !

On/Off function is placed at either extremes of the signal range to be able to utilize a 3-position switch and still reach both trigger functions.

** Signal out of scope or no input signal !

No signal state will occur when signal is out of the standard R/C PWM signal range or if no signal is received.

Example with Seagull #MAP2 configured to CH7 on a Taranis X9D transmitter:

SERVOs	1500us	7 / 13
CH1 RAil	0.0 - 100.0 - 100.0 $\rightarrow$ ---	1500 Δ
CH2 Ele	0.0 - 100.0 - 100.0 $\rightarrow$ ---	1500 Δ
CH3 Thr	0.0 - 100.0 - 100.0 $\rightarrow$ ---	1500 Δ
CH4 Rud	0.0 - 100.0 - 100.0 $\rightarrow$ ---	1500 Δ
CH5 LAil	0.0 - 100.0 - 100.0 $\rightarrow$ ---	1500 Δ
CH6	0.0 - 100.0 - 100.0 $\rightarrow$ ---	1500 Δ
CH7 Seagull#MAP2	0.0 - 60.5 - 60.5 $\rightarrow$ ---	1500 Δ

Connecting to your Receiver / Flight Controller

Connect the servo cable by following the polarity markings on Seagull MAP2 and connect the other end of servo cable to your Receiver / Flight Controller, with the correct polarity.
("Otherwise the magic smoke escapes!! - don't worry, it's protected against reversed connection ☺")

Please refer to the manual of your specific R/C radio system or Flight Controller to find out more about how to connect accessories and what ports to utilize.

NOTE: for Pixhawk users –#MAP2 is powered by Pixhawk's power rail (the middle pin +). Ensure that the rail is powered by BEC or other power source ranging from 3.5-5.5 Volts in order for #MAP2 to function properly.



Camera ON / OFF

If you wish to integrate camera turn ON or OFF into your Survey/Mission plan via use of Ground control or Mission Planner software, simply follow the steps below.

In this scenario we want to turn on the camera after the take-off.

The screenshot shows the Mission Planner 1.3.25 interface. The main map displays a mission plan with a series of waypoints (green dots) forming a rectangular path around a track. A purple callout box points to the "RC (Channel) number on your flight controller that ON/OFF is plugged into" column in the table. The table lists various commands and their parameters. A purple callout box points to the "MODE VALUE" column, explaining the values for turning the camera on and returning to neutral mode.

Waypoint	RC (Channel) number on your flight controller that ON/OFF is plugged into	MODE VALUE
1	TAKEOFF	0
2	DO_CHANGE_SPEED	0
3	WAYPOINT	0
4	DO_SET_SERVO	9 1900
5	DO_SET_SERVO	9 1500
6	WAYPOINT	0
7	DO_DIGICAM_CONTROL	0
8	WAYPOINT	0
9	DO_DIGICAM_CONTROL	0
10	WAYPOINT	0

If using channel 1 on #MAP 2: 1100/1900 } value on RC9 (AUX1) "turn on the camera"
If using channel 2 on #MAP 2: 1900 } value on RC9 (AUX1) "return Seagull #MAP 2 to neutral mode"
1500 value on RC9 (AUX1) "return Seagull #MAP 2 to neutral mode"

NOTE: Make sure to let the signal be on for some period in the mission plan when doing DO_SET_SERVO command, in order for MAP2 to read it correctly. Repeat the sequence at the end of the mission in order to retract the lenses to protect the mechanism before landing. Very helpful on plane platforms as well as multirotor platform in order to prevent dust coming into the lenses.

Keep-alive

This mode is specially designed for Sony QX1 users to prevent the camera from shutting off during flights or mission flights.

The screenshot shows the Mission Planner 1.3.25 interface. The main map displays a mission plan with a series of waypoints (green dots) forming a rectangular path around a track. A purple callout box points to the "RC (channel) that Keep alive is plugged into" column in the table. The table lists various commands and their parameters. A purple callout box points to the "Keep alive mode value" column, explaining the values for turning the camera on and returning to neutral mode.

Waypoint	RC (channel) that Keep alive is plugged into	Keep alive mode value
1	DO_REPEAT_SERVO	9 1700 5 50

In the example above, channel 9 would be moved to PWM 1700 (Keep-alive), then after 50 seconds, back to "Neutral mode" (which is set to 1500 in the RC9_TRIM parameter), after another 60 seconds it would be moved to 1700 (Keep-alive) again, then finally after 50 more seconds it would be moved back to "Neutral mode". This loop will continue depending on how many repetitions you have set to repeat the signal.

Setting up Mission Planner / Ground Control

If you wish to trigger Seagull #MAP2 from a Flight Controller, setting it up in Mission Planner is also straight forward. Start Mission Planner and follow the steps below.

1. Click on **INITIAL SETUP** >> **OPTIONAL HARDWARE** >> **CAMERA GIMBAL**
2. **"SHUTTER"** - in the drop down list, chose the channel that Seagull #MAP2 is connected to.
3. **"PUSHED"** - Set the "Value" for the desired trigger mode (AF-T or IS-T see table below)

State / Mode	Value	Range
Neutral	1500 μ S	1400 $\leftrightarrow$ 1600 μ S
AF-T	1300 μ S	1200 $\leftrightarrow$ 1400 μ S
IS-T	1700 μ S	1600 $\leftrightarrow$ 1800 μ S

4. **"NOT PUSHED"** – Set the value "1500" (**Neutral** state – see table above)
5. **"DURATION"** – Set the value "1" for **AF-T** mode or "10" for **IS-T** mode
(values may vary depending on how long it takes for your specific camera model and lens configuration to lock focus. Try increasing or decreasing the values to find the sweet spot where the camera can keep up with the duration time that the shutter is held pushed/triggered for)

Example from Mission Planner:

Mission Planner

FLIGHT DATA FLIGHT PLAN **INITIAL SETUP** CONFIG/TUNING SIMULATION TERMINAL HELP DONATE

Link Stats... DISCONNECT

Install Firmware Wizard

>> Mandatory Hardware

>> **Optional Hardware**

3DR Radio

Battery Monitor

Compass/Motor Calib

Sonar

Airspeed

Optical Flow

OSD

Camera Gimbal

Antenna tracker

Motor Test

Tilt ☐ Stabilise Tilt

Roll ☐ Stabilise Roll

Pan ☐ Stabilise Pan

Shutter **CH 7** <- Select channel that Seagull #MAP2 is connected to. ex. CH 7

Servo Limits Angle Limits Input Ch

Min 1000 Min 1000

Max 2000 Max 2000

Retract Angles

X 0

Y 0

Z 0

Neutral Angles

X 0

Y 0

Z 0

Control Angles

X 0

Y 0

Z 0

Pushed 1700 <- Set value for thosen mode. ex. IS-T

Not Pushed 1500 <- Set value "1500" - Neutral state

Duration (1/10th sec) 10 <- Set values: "10" for IS-T / "1" for AF-T

Troubleshooting

To determine what state Seagull #MAP2 is currently in - simply read the output of the "STATE LED" and match it with the "Action" in the table below.



The following table shows the STATE LED readout for the different states / modes.

STATE LED	Action
Blinking	No Signal - check connections and mode values
Fading	Ready - waiting for next command
Solid on	Active in one of the 5 modes – return to "Neutral" before next command
Fade >> Solid on	Keep-alive mode activated - return to "Neutral" to exit the mode
Fade >> Solid on	AF-T mode activated - return to "Neutral" before next command
Fade >> Solid on (repeat)	Timelapse mode activated – return to "Neutral" to exit the mode
Blink >> Solid on	IS-T mode activated - return to "Neutral" before new command
Blink >> Solid on	Camera On/Off activated (Only Sony "Multi" cameras)

Technical specifications

- Dimensions: 28.6 x 10.3 x 7.7 mm
- Weight: 1.6g (~ 12g with cables - depending on cable type)
- Voltage: 3.5 – 5.5 volts (5 volts recommended – do **NOT** exceed 5.5 volts !!)
- Current: 21.75mA max (when STATE LED is Solid ON - varies when Fading)
- Input signal: Standard R/C PWM between 1000 – 2000µS