

Parameters which have been changed in Arducopter v4.2.3 to accomplish a correct behaviour of the Flowerfly singlecopter

All changes have been applied in the Mission Planner menu **Config** → **Full Parameter List**

General parameters:

FRAME_CLASS = 8 (= SingleCopter)

FRAME_TYPE = 5 (= A-Tail, this parameter is VERY important for correct software function)

SERVO1_FUNCTION = 33 (Motor1)

SERVO2_FUNCTION = 34 (Motor2)

SERVO3_FUNCTION = 35 (Motor3)

SERVO4_FUNCTION = 36 (Motor4, is not used in Flowerfly A-Tail configuration)

GPS_GNSS_MODE = 71 (GPS + GALILEO + GLONASS + SBAS)

ANGLE_MAX = 1000

MOT_THST_EXPO = 0,6

MOT_THST_HOVER = 0,2

MOT_BAT_VOLT_MAX = 16,8

MOT_BAT_VOLT_MIN = 13,2

BATT_ARM_VOLT = 14,7

BATT_CRT_VOLT = 14

BATT_LOW_VOLT = 14,4

BATT_FS_LOW_ACT = 2 (= RTL or Land)

PID parameters:

INS_GYRO_FILTER = 57

ATC_THR_MIX_MAN = 0,5

ATC_ACCEL_P_MAX = 146100

ATC_ACCEL_R_MAX = 146100

ATC_ACCEL_Y_MAX = 29700

ATC_RAT_RLL_P = 0,11

ATC_RAT_RLL_I = 0,08

ATC_RAT_RLL_D = 0,003

ATC_RAT_PIT_P = 0,11

ATC_RAT_PIT_I = 0,08

ATC_RAT_PIT_D = 0,003

ATC_RAT_YAW_P = 0,1

ATC_RAT_YAW_I = 0,01

ATC_RAT_YAW_D = 0,002

ATC_RAT_PIT_FLTD = 28,5

ATC_RAT_PIT_FLTT = 28,5

ATC_RAT_RLL_FLTD = 28,5

ATC_RAT_RLL_FLTT = 28,5

ATC_RAT_YAW_FLTE = 2

ATC_RAT_YAW_FLTT = 28,5

PSC_ACCZ_P = 0,75

PSC_ACCZ_I = 1,5

Camera parameters:

See also <https://ardupilot.org/copter/docs/common-camera-gimbal.html>

SERVO9_FUNCTION = 7

SERVO9_REVERSED = 1

Mission Planner v1.3.79 menu **Initial Setup** → **Mandatory Hardware** → **Servo Output**:

Mission Planner 1.3.79 build 1.3.8375.24878 ArduCopter V4.2.3 (a480c0a7)

#	Position	Reverse	Function	Min	Trim	Max
1	1218	<input type="checkbox"/>	Motor1	1100	1500	1900
2	1350	<input type="checkbox"/>	Motor2	950	1350	1750
3	1844	<input type="checkbox"/>	Motor3	1044	1444	1844
4	1500	<input type="checkbox"/>	Motor4	1100	1500	1900
5	1000	<input type="checkbox"/>	Motor5	1100	1500	1900
6	1000	<input type="checkbox"/>	Motor6	1100	1500	1900
7	0	<input type="checkbox"/>	Disabled	1100	1500	1900
8	0	<input type="checkbox"/>	Disabled	1100	1500	1900
9	1509	<input checked="" type="checkbox"/>	Mount1Pitch	988	1500	2012
10	0	<input type="checkbox"/>	Disabled	1100	1500	1900
11	0	<input type="checkbox"/>	Disabled	1100	1500	1900
12	0	<input type="checkbox"/>	Disabled	1100	1500	1900
13	0	<input type="checkbox"/>	Disabled	1100	1500	1900
14	0	<input type="checkbox"/>	Disabled	1100	1500	1900
15	1000	<input type="checkbox"/>	Disabled	1100	1500	1900
16	1000	<input type="checkbox"/>	Disabled	1100	1500	1900

Mission Planner v1.3.79 menu **Initial Setup** → **Mandatory Hardware** → **Flight Modes**:

Mission Planner 1.3.79 build 1.3.8375.24878 ArduCopter V4.2.3 (a480c0a7)

Aktueller Modus Stabilize
Current PWM: 5: 0

Flight Mode	Mode	Simple Mode	Super Simple Mode	PWM Range
Flight Mode 1	AltHold	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PWM 0 - 1230
Flight Mode 2	Stabilize	<input type="checkbox"/>	<input type="checkbox"/>	PWM 1231 - 1360
Flight Mode 3	Stabilize	<input type="checkbox"/>	<input type="checkbox"/>	PWM 1361 - 1490
Flight Mode 4	Loiter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PWM 1491 - 1620
Flight Mode 5	Stabilize	<input type="checkbox"/>	<input type="checkbox"/>	PWM 1621 - 1749
Flight Mode 6	Land	<input type="checkbox"/>	<input type="checkbox"/>	PWM 1750 +

Modus speichern

[Beschreibung 'Simple' and 'Super Simple'](#)

Mission Planner v1.3.79 menu **Initial Setup** → **Mandatory Hardware** → **FailSafe**:

Mission Planner 1.3.79 build 1.3.8375.24878 ArduCopter V4.2.3 (a480c0a7)

DATA PLAN **SETUP** CONFIG SIMULATION HELP

Firmware installieren

- >> Basis Hardware
 - Rahmentyp
 - Initial Parameter Set
 - Kalibrierung Beschleunigung
 - Kompass
 - Kalibrierung RC-Steuerung
 - Servo Output
 - ESC Calibration
 - Flugmodi
 - FailSafe**
 - HW ID
 - ADSB
- >> Optionale Hardware
- >> Advanced

RC-Steuerung-Eingang

Servo/Motor-Ausgang

Radio 1: 1218

Radio 2: 1350

Radio 3: 1844

Radio 4: 1500

Radio 5: 1000

Radio 6: 1000

Stabilize

Disarmed

GPS: No Fix

Batterie

Niedriger Ladestand: 14.4

Reserve mAh: 0

Low Timer: 10

RTL

RC-Steuerung

Disabled

FS PWM: 975

GCS

GCS FS aktiviert

Mission Planner v1.3.79 menu **Initial Setup** → **Optional Hardware** → **Camera Gimbal**:

Mission Planner 1.3.79 build 1.3.8375.24878 ArduCopter V4.2.3 (a480c0a7)

DATA PLAN SETUP **CONFIG** SIMULATION HELP

Firmware installieren

- >> Basis Hardware
- >> Optionale Hardware
 - RTK/GPS Inject
 - SiK Radio
 - CAN GPS Order
 - Batterieanzeige
 - Batterieanzeige 2
 - DroneCAN/UAVCAN
 - Joystick
 - Kompass/Motor Kalibrierung
 - Range Finder
 - Airspeed
 - PX4Flow
 - Optical Flow
 - OSD
 - Kamera Gimbal**
 - Motor Test
 - Bluetooth Einstellung

Typ: Servo

Tilt: SERVO9

HINWEIS: Neuer Gimbaltyp ist erst nach Neustart des Autopiloten aktiv.

Tilt stabilisieren

Servo-Limits: Min 988, Max 2012

Winkel-Limits: Min -45, Max 45

Eingangskanal: RC8

Umkehren

Rollen: Rollen stabilisieren

Servo-Limits: Min 1000, Max 2000

Winkel-Limits: Min 1000, Max 2000

Umkehren

Pan: Pan stabilisieren

Servo-Limits: Min 1000, Max 2000

Winkel-Limits: Min 1000, Max 2000

Umkehren

Auslöser: Disable

Servo-Limits: Min 1000, Max 2000

Auslöser: Gedrückt 1300, Nicht gedrückt 1100

Dauer (1/10 sec): 10

Einfahrwinkel: X 0, Y 0, Z 0

Neutrale Winkel: X 0, Y 0, Z 0

Steuerungswinkel: X 180, Y 180, Z 180

CH7 auf "Kamera auslösen" setzen

Mission Planner v1.3.79 menu **Config Tuning** → **Extended Tuning**:

Mission Planner 1.3.79 build 1.3.8375.24878 ArduCopter V4.2.3 (a480c0a7)

DATA PLAN SETUP CONFIG SIMULATION HELP

GeoFence

Basic Tuning

Extended Tuning

Standard Params

Advanced Params

Onboard OSD

MAVftp

User Params

Full Parameter List

Full Parameter Tree

Planner

Stabilize Roll P 4,500 ACCEL MA 146100

Stabilize Pitch P 4,500 ACCEL MA 146100

Stabilize Yaw P 4,500 ACCEL MA 29700

Loiter PID P 1,000 INPUT TC 0,150

Pitch- und Roll-Werte sperren

Rate Roll P 0,110 I 0,080 D 0,003 IMAX 0,500 FLTE 0 FLTD 28,5 FLTT 28,5

Rate Pitch P 0,110 I 0,080 D 0,003 IMAX 0,500 FLTE 0 FLTD 28,5 FLTT 28,5

Rate Yaw P 0,100 I 0,010 D 0,002 IMAX 0,500 FLTE 2 FLTD 0 FLTT 28,5

Rate Loiter P 2,0 I 1,000 D 0,500 IMAX 100

Basic Filters Gyro 57 Accel 20

Gas Besch. P 0,75 I 1,500 D 0,000 IMAX 80

Gas Rate P 5,000 RC6 Opt None Min 0,000 0,000

Höhe halten P 1,000 RC6 Opt Do Nothing RC7 Opt Do Nothing RC8 Opt Do Nothing RC9 Opt Do Nothing RC10 Opt Do Nothing

WPNav (cm's) Geschwindi 1000 Radius 200 Speed Up 250 Speed Dn 150 Loiter 1250

Filter Logs Mask Options 0

Static Notch Filter Enabled Frequency 10 BandWidth 5 Attenuation 5

Harmonic Notch Filter Enabled Disabled Mode 0 Reference 0 Frequency 10 Attenuation 5 Bandwidth 5 Options 0 Harmonics 0

Parameter speichern Screen aktualisieren