|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ACRO\_BAL\_PITCH | 1 |  | 0 3 | rate at which pitch angle returns to level in acro and sport mode.  A higher value causes the vehicle to return to level faster. |
| ACRO\_BAL\_ROLL | 1 |  | 0 3 | rate at which roll angle returns to level in acro and sport mode.  A higher value causes the vehicle to return to level faster. |
| ACRO\_EXPO | 0.3 |  |  |  |
| ACRO\_RP\_P | 4.5 |  | 1 10 | Converts pilot roll and pitch into a desired rate of rotation in ACRO and SPORT mode.  Higher values mean faster rate of rotation. |
| ACRO\_TRAINER | 2 |  | 0:Disabled 1:Leveling 2:Leveling and Limited | Type of trainer used in acro mode |
| ACRO\_YAW\_P | 3 |  | 1 10 | Converts pilot yaw input into a desired rate of rotation.  Higher values mean faster rate of rotation. |
| AHRS\_COMP\_BETA | 0.1 |  | 0.001 0.5 | This controls the time constant for the cross-over frequency used to fuse AHRS (airspeed and heading) and GPS data to estimate ground velocity. Time constant is 0.1/beta. A larger time constant will use GPS data less and a small time constant will use air data less. |
| AHRS\_GPS\_GAIN | 1 |  | 0.0 1.0 | This controls how much to use the GPS to correct the attitude. This should never be set to zero for a plane as it would result in the plane losing control in turns. For a plane please use the default value of 1.0. |
| AHRS\_GPS\_MINSATS | 6 |  | 0 10 | Minimum number of satellites visible to use GPS for velocity based corrections attitude correction. This defaults to 6, which is about the point at which the velocity numbers from a GPS become too unreliable for accurate correction of the accelerometers. |
| AHRS\_GPS\_USE | 1 |  | 0:Disabled 1:Enabled | This controls whether to use dead-reckoning or GPS based navigation. If set to 0 then the GPS won't be used for navigation, and only dead reckoning will be used. A value of zero should never be used for normal flight. Currently this affects only the DCM-based AHRS: the EKF uses GPS whenever it is available. |
| AHRS\_ORIENTATION | 0 |  | 0:None 1:Yaw45 2:Yaw90 3:Yaw135 4:Yaw180 5:Yaw225 6:Yaw270 7:Yaw315 8:Roll180 9:Roll180Yaw45 10:Roll180Yaw90 11:Roll180Yaw135 12:Pitch180 13:Roll180Yaw225 14:Roll180Yaw270 15:Roll180Yaw315 16:Roll90 17:Roll90Yaw45 18:Roll90Yaw90 19:Roll90Yaw135 20:Roll270 21:Roll270Yaw45 22:Roll270Yaw90 23:Roll270Yaw135 24:Pitch90 25:Pitch270 26:Pitch180Yaw90 27:Pitch180Yaw270 28:Roll90Pitch90 29:Roll180Pitch90 30:Roll270Pitch90 31:Roll90Pitch180 32:Roll270Pitch180 33:Roll90Pitch270 34:Roll180Pitch270 35:Roll270Pitch270 36:Roll90Pitch180Yaw90 37:Roll90Yaw270 38:Yaw293Pitch68Roll180 39:Pitch315 40:Roll90Pitch315 100:Custom | Overall board orientation relative to the standard orientation for the board type. This rotates the IMU and compass readings to allow the board to be oriented in your vehicle at any 90 or 45 degree angle. This option takes affect on next boot. After changing you will need to re-level your vehicle. |
| AHRS\_RP\_P | 0.1 |  | 0.1 0.4 | This controls how fast the accelerometers correct the attitude |
| AHRS\_TRIM\_X | -0.006569164 | rad | -0.1745 +0.1745 | Compensates for the roll angle difference between the control board and the frame. Positive values make the vehicle roll right. |
| AHRS\_TRIM\_Y | 0.0092838 | rad | -0.1745 +0.1745 | Compensates for the pitch angle difference between the control board and the frame. Positive values make the vehicle pitch up/back. |
| AHRS\_TRIM\_Z | 0 | rad | -0.1745 +0.1745 | Not Used |
| AHRS\_WIND\_MAX | 0 | m/s | 0 127 | This sets the maximum allowable difference between ground speed and airspeed. This allows the plane to cope with a failing airspeed sensor. A value of zero means to use the airspeed as is. |
| AHRS\_YAW\_P | 0.1 |  | 0.1 0.4 | This controls the weight the compass or GPS has on the heading. A higher value means the heading will track the yaw source (GPS or compass) more rapidly. |
| ANGLE\_MAX | 3000 | cdeg | 1000 8000 | Maximum lean angle in all flight modes |
| ARMING\_CHECK | 0 |  | 0:None 1:All 2:Barometer 4:Compass 8:GPS Lock 16:INS(INertial Sensors - accels & gyros) 32:Parameters(unused) 64:RC Channels 128:Board voltage 256:Battery Level 1024:LoggingAvailable 2048:Hardware safety switch 4096:GPS configuration 8192:System | Checks prior to arming motor. This is a bitmask of checks that will be performed before allowing arming. The default is no checks, allowing arming at any time. You can select whatever checks you prefer by adding together the values of each check type to set this parameter. For example, to only allow arming when you have GPS lock and no RC failsafe you would set ARMING\_CHECK to 72. For most users it is recommended that you set this to 1 to enable all checks. |
| ATC\_ACCEL\_RP\_MAX | 0 |  |  |  |
| ATC\_ACCEL\_Y\_MAX | 18000 | cdeg/s/s | 0 720000:Disabled  9000:VerySlow  18000:Slow  36000:Medium  54000:Fast | Maximum acceleration in yaw axis |
| ATC\_RATE\_FF\_ENAB | 1 |  | 0:Disabled  1:Enabled | Controls whether body-frame rate feedfoward is enabled or disabled |
| ATC\_RATE\_RP\_MAX | 18000 |  |  |  |
| ATC\_RATE\_Y\_MAX | 9000 | deg/s | 0 10800:Disabled  360:Slow  720:Medium  1080:Fast | Maximum angular velocity in yaw axis |
| ATC\_SLEW\_YAW | 6000 | cdeg/s | 500 18000 | Maximum rate the yaw target can be updated in Loiter, RTL, Auto flight modes |
| BAROGLTCH\_ACCEL | 1500 |  |  |  |
| BAROGLTCH\_DIST | 500 |  |  |  |
| BAROGLTCH\_ENABLE | 1 |  |  |  |
| BATT\_AMP\_OFFSET | 0 | V |  | Voltage offset at zero current on current sensor |
| BATT\_AMP\_PERVOLT | 18.0018 |  |  |  |
| BATT\_CAPACITY | 3300 | mAh |  | Capacity of the battery in mAh when full |
| BATT\_CURR\_PIN | 12 |  | -1:Disabled  3:Pixhawk/Pixracer/Navio2/Pixhawk2\_PM1  14:Pixhawk2\_PM2  101:PX4-v1 | Sets the analog input pin that should be used for current monitoring. |
| BATT\_MONITOR | 4 |  | 0:Disabled 3:Analog Voltage Only 4:Analog Voltage and Current 5:Solo 6:Bebop 7:SMBus-Maxell 8:UAVCAN-BatteryInfo 9:BLHeli ESC 10:SumOfFollowing 11:FuelFlow | Controls enabling monitoring of the battery's voltage and current |
| BATT\_VOLT\_MULT | 10.10101 |  |  | Used to convert the voltage of the voltage sensing pin (@ |
| BATT\_VOLT\_PIN | 13 |  | -1:Disabled  2:Pixhawk/Pixracer/Navio2/Pixhawk2\_PM1  13:Pixhawk2\_PM2  100:PX4-v1 | Sets the analog input pin that should be used for voltage monitoring. |
| BATT\_VOLT2\_MULT | 1 |  |  |  |
| BATT\_VOLT2\_PIN | -1 |  |  |  |
| CAM\_DURATION | 10 | ds | 0 50 | How long the shutter will be held open in 10ths of a second (i.e. enter 10 for 1second, 50 for 5seconds) |
| CAM\_SERVO\_OFF | 1100 | PWM | 1000 2000 | PWM value in microseconds to move servo to when shutter is deactivated |
| CAM\_SERVO\_ON | 1300 | PWM | 1000 2000 | PWM value in microseconds to move servo to when shutter is activated |
| CAM\_TRIGG\_DIST | 0 | m | 0 1000 | Distance in meters between camera triggers. If this value is non-zero then the camera will trigger whenever the GPS position changes by this number of meters regardless of what mode the APM is in. Note that this parameter can also be set in an auto mission using the DO\_SET\_CAM\_TRIGG\_DIST command, allowing you to enable/disable the triggering of the camera during the flight. |
| CAM\_TRIGG\_TYPE | 0 |  | 0:Servo 1:Relay | how to trigger the camera to take a picture |
| CH7\_OPT | 16 |  | 0:Do Nothing  2:Flip  3:Simple Mode  4:RTL  5:Save Trim  7:Save WP  9:Camera Trigger  10:RangeFinder  11:Fence  13:Super Simple Mode  14:Acro Trainer  15:Sprayer  16:Auto  17:AutoTune  18:Land  19:Gripper  21:Parachute Enable  22:Parachute Release  23:Parachute 3pos  24:Auto Mission Reset  25:AttCon Feed Forward  26:AttCon Accel Limits  27:Retract Mount  28:Relay On/Off  34:Relay2 On/Off  35:Relay3 On/Off  36:Relay4 On/Off  29:Landing Gear  30:Lost Copter Sound  31:Motor Emergency Stop  32:Motor Interlock  33:Brake  37:Throw  38:ADSB-Avoidance  39:PrecLoiter  40:Object Avoidance  41:ArmDisarm  42:SmartRTL  43:InvertedFlight  44:Winch Enable  45:WinchControl | Select which function is performed when CH7 is above 1800 pwm |
| CH8\_OPT | 3 |  | 0:Do Nothing  2:Flip  3:Simple Mode  4:RTL  5:Save Trim  7:Save WP  9:Camera Trigger  10:RangeFinder  11:Fence  13:Super Simple Mode  14:Acro Trainer  15:Sprayer  16:Auto  17:AutoTune  18:Land  19:Gripper  21:Parachute Enable  22:Parachute Release  23:Parachute 3pos  24:Auto Mission Reset  25:AttCon Feed Forward  26:AttCon Accel Limits  27:Retract Mount  28:Relay On/Off  34:Relay2 On/Off  35:Relay3 On/Off  36:Relay4 On/Off  29:Landing Gear  30:Lost Copter Sound  31:Motor Emergency Stop  32:Motor Interlock  33:Brake  37:Throw  38:ADSB-Avoidance  39:PrecLoiter  40:Object Avoidance  41:ArmDisarm  42:SmartRTL  43:InvertedFlight  44:Winch Enable  45:WinchControl | Select which function is performed when CH8 is above 1800 pwm |
| CIRCLE\_RADIUS | 1000 | cm | 0 10000 | Defines the radius of the circle the vehicle will fly when in Circle flight mode |
| CIRCLE\_RATE | 20 | deg/s | -90 90 | Circle mode's turn rate in deg/sec.  Positive to turn clockwise, negative for counter clockwise |
| COMPASS\_AUTODEC | 1 |  | 0:Disabled 1:Enabled | Enable or disable the automatic calculation of the declination based on gps location |
| COMPASS\_DEC | 0 | rad | -3.142 3.142 | An angle to compensate between the true north and magnetic north |
| COMPASS\_EXTERNAL | 1 |  | 0:Internal 1:External 2:ForcedExternal | Configure compass so it is attached externally. This is auto-detected on PX4 and Pixhawk. Set to 1 if the compass is externally connected. When externally connected the COMPASS\_ORIENT option operates independently of the AHRS\_ORIENTATION board orientation option. If set to 0 or 1 then auto-detection by bus connection can override the value. If set to 2 then auto-detection will be disabled. |
| COMPASS\_LEARN | 0 |  | 0:Disabled 1:Internal-Learning 2:EKF-Learning 3:InFlight-Learning | Enable or disable the automatic learning of compass offsets. You can enable learning either using a compass-only method that is suitable only for fixed wing aircraft or using the offsets learnt by the active EKF state estimator. If this option is enabled then the learnt offsets are saved when you disarm the vehicle. If InFlight learning is enabled then the compass with automatically start learning once a flight starts (must be armed). While InFlight learning is running you cannot use position control modes. |
| COMPASS\_MOT\_X | 0 | mGauss/A | -1000 1000 | Multiplied by the current throttle and added to the compass's x-axis values to compensate for motor interference (Offset per Amp or at Full Throttle) |
| COMPASS\_MOT\_Y | 0 | mGauss/A | -1000 1000 | Multiplied by the current throttle and added to the compass's y-axis values to compensate for motor interference (Offset per Amp or at Full Throttle) |
| COMPASS\_MOT\_Z | 0 | mGauss/A | -1000 1000 | Multiplied by the current throttle and added to the compass's z-axis values to compensate for motor interference (Offset per Amp or at Full Throttle) |
| COMPASS\_MOTCT | 0 |  | 0:Disabled 1:Use Throttle 2:Use Current | Set motor interference compensation type to disabled, throttle or current.  Do not change manually. |
| COMPASS\_OFS\_X | 66 | mGauss | -400 400 | Offset to be added to the compass x-axis values to compensate for metal in the frame |
| COMPASS\_OFS\_Y | -18 | mGauss | -400 400 | Offset to be added to the compass y-axis values to compensate for metal in the frame |
| COMPASS\_OFS\_Z | -19 | mGauss | -400 400 | Offset to be added to the compass z-axis values to compensate for metal in the frame |
| COMPASS\_ORIENT | 8 |  | 0:None 1:Yaw45 2:Yaw90 3:Yaw135 4:Yaw180 5:Yaw225 6:Yaw270 7:Yaw315 8:Roll180 9:Roll180Yaw45 10:Roll180Yaw90 11:Roll180Yaw135 12:Pitch180 13:Roll180Yaw225 14:Roll180Yaw270 15:Roll180Yaw315 16:Roll90 17:Roll90Yaw45 18:Roll90Yaw90 19:Roll90Yaw135 20:Roll270 21:Roll270Yaw45 22:Roll270Yaw90 23:Roll270Yaw135 24:Pitch90 25:Pitch270 26:Pitch180Yaw90 27:Pitch180Yaw270 28:Roll90Pitch90 29:Roll180Pitch90 30:Roll270Pitch90 31:Roll90Pitch180 32:Roll270Pitch180 33:Roll90Pitch270 34:Roll180Pitch270 35:Roll270Pitch270 36:Roll90Pitch180Yaw90 37:Roll90Yaw270 38:Yaw293Pitch68Roll180 39:Pitch315 40:Roll90Pitch315 | The orientation of the first external compass relative to the vehicle frame. This value will be ignored unless this compass is set as an external compass. When set correctly in the northern hemisphere, pointing the nose and right side down should increase the MagX and MagY values respectively. Rolling the vehicle upside down should decrease the MagZ value. For southern hemisphere, switch increase and decrease. NOTE: For internal compasses, AHRS\_ORIENT is used. |
| COMPASS\_USE | 1 |  | 0:Disabled 1:Enabled | Enable or disable the use of the compass (instead of the GPS) for determining heading |
| DCM\_CHECK\_THRESH | 0.8 |  |  |  |
| EKF\_CHECK\_THRESH | 0.8 |  |  |  |
| ESC | 0 |  |  |  |
| FENCE\_ACTION | 1 |  | 0:Report Only 1:RTL or Land 2:Always Land 3:SmartRTL or RTL or Land 4:Brake or Land | What action should be taken when fence is breached |
| FENCE\_ALT\_MAX | 100 | m | 10 1000 | Maximum altitude allowed before geofence triggers |
| FENCE\_ENABLE | 1 |  | 0:Disabled 1:Enabled | Allows you to enable (1) or disable (0) the fence functionality |
| FENCE\_MARGIN | 2 | m | 1 10 | Distance that autopilot's should maintain from the fence to avoid a breach |
| FENCE\_RADIUS | 300 | m | 30 10000 | Circle fence radius which when breached will cause an RTL |
| FENCE\_TYPE | 3 |  | 0:None 1:Altitude 2:Circle 3:Altitude and Circle 4:Polygon 5:Altitude and Polygon 6:Circle and Polygon 7:All | Enabled fence types held as bitmask |
| FLOW\_ENABLE | 0 |  | 0:Disabled  1:Enabled | Setting this to Enabled(1) will enable optical flow. Setting this to Disabled(0) will disable optical flow |
| FLTMODE1 | 0 |  | 0:Stabilize 1:Acro 2:AltHold 3:Auto 4:Guided 5:Loiter 6:RTL 7:Circle 9:Land 11:Drift 13:Sport 14:Flip 15:AutoTune 16:PosHold 17:Brake 18:Throw 19:Avoid\_ADSB 20:Guided\_NoGPS 21:Smart\_RTL 22:FlowHold 23:Follow 24:ZigZag | Flight mode when Channel 5 pwm is <= 1230 |
| FLTMODE2 | 3 |  | 0:Stabilize 1:Acro 2:AltHold 3:Auto 4:Guided 5:Loiter 6:RTL 7:Circle 9:Land 11:Drift 13:Sport 14:Flip 15:AutoTune 16:PosHold 17:Brake 18:Throw 19:Avoid\_ADSB 20:Guided\_NoGPS 21:Smart\_RTL 22:FlowHold 23:Follow 24:ZigZag | Flight mode when Channel 5 pwm is >1230, <= 1360 |
| FLTMODE3 | 3 |  | 0:Stabilize 1:Acro 2:AltHold 3:Auto 4:Guided 5:Loiter 6:RTL 7:Circle 9:Land 11:Drift 13:Sport 14:Flip 15:AutoTune 16:PosHold 17:Brake 18:Throw 19:Avoid\_ADSB 20:Guided\_NoGPS 21:Smart\_RTL 22:FlowHold 23:Follow 24:ZigZag | Flight mode when Channel 5 pwm is >1360, <= 1490 |
| FLTMODE4 | 3 |  | 0:Stabilize 1:Acro 2:AltHold 3:Auto 4:Guided 5:Loiter 6:RTL 7:Circle 9:Land 11:Drift 13:Sport 14:Flip 15:AutoTune 16:PosHold 17:Brake 18:Throw 19:Avoid\_ADSB 20:Guided\_NoGPS 21:Smart\_RTL 22:FlowHold 23:Follow 24:ZigZag | Flight mode when Channel 5 pwm is >1490, <= 1620 |
| FLTMODE5 | 3 |  | 0:Stabilize 1:Acro 2:AltHold 3:Auto 4:Guided 5:Loiter 6:RTL 7:Circle 9:Land 11:Drift 13:Sport 14:Flip 15:AutoTune 16:PosHold 17:Brake 18:Throw 19:Avoid\_ADSB 20:Guided\_NoGPS 21:Smart\_RTL 22:FlowHold 23:Follow 24:ZigZag | Flight mode when Channel 5 pwm is >1620, <= 1749 |
| FLTMODE6 | 3 |  | 0:Stabilize 1:Acro 2:AltHold 3:Auto 4:Guided 5:Loiter 6:RTL 7:Circle 9:Land 11:Drift 13:Sport 14:Flip 15:AutoTune 16:PosHold 17:Brake 18:Throw 19:Avoid\_ADSB 20:Guided\_NoGPS 21:Smart\_RTL 22:FlowHold 23:Follow 24:ZigZag | Flight mode when Channel 5 pwm is >=1750 |
| FRAME | 1 |  |  |  |
| FS\_BATT\_ENABLE | 1 |  |  |  |
| FS\_BATT\_MAH | 3300 |  |  |  |
| FS\_BATT\_VOLTAGE | 0 |  |  |  |
| FS\_GCS\_ENABLE | 0 |  | 0:Disabled 1:Enabled always RTL 2:Enabled Continue with Mission in Auto Mode 3:Enabled always SmartRTL or RTL 4:Enabled always SmartRTL or Land | Controls whether failsafe will be invoked (and what action to take) when connection with Ground station is lost for at least 5 seconds. NB. The GCS Failsafe is only active when RC\_OVERRIDE is being used to control the vehicle. |
| FS\_GPS\_ENABLE | 0 |  |  |  |
| FS\_THR\_ENABLE | 0 |  | 0:Disabled 1:Enabled always RTL 2:Enabled Continue with Mission in Auto Mode 3:Enabled always Land 4:Enabled always SmartRTL or RTL 5:Enabled always SmartRTL or Land | The throttle failsafe allows you to configure a software failsafe activated by a setting on the throttle input channel |
| FS\_THR\_VALUE | 975 | PWM | 925 1100 | The PWM level in microseconds on channel 3 below which throttle failsafe triggers |
| GND\_ABS\_PRESS | 47384.56 | Pa |  | calibrated ground pressure in Pascals |
| GND\_ALT\_OFFSET | 0 | m |  | altitude offset in meters added to barometric altitude. This is used to allow for automatic adjustment of the base barometric altitude by a ground station equipped with a barometer. The value is added to the barometric altitude read by the aircraft. It is automatically reset to 0 when the barometer is calibrated on each reboot or when a preflight calibration is performed. |
| GND\_TEMP | 40.26778 | degC |  | User provided ambient ground temperature in degrees Celsius. This is used to improve the calculation of the altitude the vehicle is at. This parameter is not persistent and will be reset to 0 every time the vehicle is rebooted. A value of 0 means use the internal measurement ambient temperature. |
| GPS\_HDOP\_GOOD | 140 |  | 100 900 | GPS Hdop value at or below this value represent a good position.  Used for pre-arm checks |
| GPS\_NAVFILTER | 8 |  | 0:Portable 2:Stationary 3:Pedestrian 4:Automotive 5:Sea 6:Airborne1G 7:Airborne2G 8:Airborne4G | Navigation filter engine setting |
| GPS\_TYPE | 1 |  | 0:None 1:AUTO 2:uBlox 3:MTK 4:MTK19 5:NMEA 6:SiRF 7:HIL 8:SwiftNav 9:UAVCAN 10:SBF 11:GSOF 13:ERB 14:MAV 15:NOVA | GPS type |
| GPSGLITCH\_ACCEL | 1000 |  |  |  |
| GPSGLITCH\_ENABLE | 1 |  |  |  |
| GPSGLITCH\_RADIUS | 200 |  |  |  |
| HLD\_LAT\_P | 1 |  |  |  |
| INAV\_TC\_XY | 2.5 |  |  |  |
| INAV\_TC\_Z | 5 |  |  |  |
| INS\_ACCOFFS\_X | -0.08092971 | m/s/s | -3.5 3.5 | Accelerometer offsets of X axis. This is setup using the acceleration calibration or level operations |
| INS\_ACCOFFS\_Y | 0.1123483 | m/s/s | -3.5 3.5 | Accelerometer offsets of Y axis. This is setup using the acceleration calibration or level operations |
| INS\_ACCOFFS\_Z | 0.1886596 | m/s/s | -3.5 3.5 | Accelerometer offsets of Z axis. This is setup using the acceleration calibration or level operations |
| INS\_ACCSCAL\_X | 1.004609 |  | 0.8 1.2 | Accelerometer scaling of X axis.  Calculated during acceleration calibration routine |
| INS\_ACCSCAL\_Y | 0.996283 |  | 0.8 1.2 | Accelerometer scaling of Y axis  Calculated during acceleration calibration routine |
| INS\_ACCSCAL\_Z | 0.9914344 |  | 0.8 1.2 | Accelerometer scaling of Z axis  Calculated during acceleration calibration routine |
| INS\_GYROFFS\_X | -0.01878348 | rad/s |  | Gyro sensor offsets of X axis. This is setup on each boot during gyro calibrations |
| INS\_GYROFFS\_Y | -0.03547044 | rad/s |  | Gyro sensor offsets of Y axis. This is setup on each boot during gyro calibrations |
| INS\_GYROFFS\_Z | 0.009311922 | rad/s |  | Gyro sensor offsets of Z axis. This is setup on each boot during gyro calibrations |
| INS\_MPU6K\_FILTER | 0 |  |  |  |
| INS\_PRODUCT\_ID | 0 |  |  |  |
| LAND\_REPOSITION | 1 |  | 0:No repositioning  1:Repositioning | Enables user input during LAND mode, the landing phase of RTL, and auto mode landings. |
| LAND\_SPEED | 50 | cm/s | 30 200 | The descent speed for the final stage of landing in cm/s |
| LOG\_BITMASK | 894 |  | 830:Default 894:Default+RCIN 958:Default+IMU 1854:Default+Motors -6146:NearlyAll-AC315 45054:NearlyAll 131071:All+FastATT 262142:All+MotBatt 393214:All+FastIMU 397310:All+FastIMU+PID 655358:All+FullIMU 0:Disabled | 4 byte bitmap of log types to enable |
| LOITER\_LAT\_D | 0 |  |  |  |
| LOITER\_LAT\_I | 0.5 |  |  |  |
| LOITER\_LAT\_IMAX | 1000 |  |  |  |
| LOITER\_LAT\_P | 1 |  |  |  |
| LOITER\_LON\_D | 0 |  |  |  |
| LOITER\_LON\_I | 0.5 |  |  |  |
| LOITER\_LON\_IMAX | 1000 |  |  |  |
| LOITER\_LON\_P | 1 |  |  |  |
| MAG\_ENABLE | 1 |  | 0:Disabled 1:Enabled | Setting this to Enabled(1) will enable the compass. Setting this to Disabled(0) will disable the compass |
| MIS\_RESTART | 0 |  | 0:Resume Mission  1:Restart Mission | Controls mission starting point when entering Auto mode (either restart from beginning of mission or resume from last command run) |
| MIS\_TOTAL | 1 |  | 0 32766 | The number of mission mission items that has been loaded by the ground station. Do not change this manually. |
| MNT\_ANGMAX\_PAN | 4500 | cdeg | -18000 17999 | Maximum physical pan (yaw) angular position of the mount |
| MNT\_ANGMAX\_ROL | 4500 | cdeg | -18000 17999 | Maximum physical roll angular position of the mount |
| MNT\_ANGMAX\_TIL | 0 | cdeg | -18000 17999 | Maximum physical tilt (pitch) angular position of the mount |
| MNT\_ANGMIN\_PAN | -4500 | cdeg | -18000 17999 | Minimum physical pan (yaw) angular position of mount. |
| MNT\_ANGMIN\_ROL | -4500 | cdeg | -18000 17999 | Minimum physical roll angular position of mount. |
| MNT\_ANGMIN\_TIL | -9000 | cdeg | -18000 17999 | Minimum physical tilt (pitch) angular position of mount. |
| MNT\_CONTROL\_X | 0 |  |  |  |
| MNT\_CONTROL\_Y | 0 |  |  |  |
| MNT\_CONTROL\_Z | 0 |  |  |  |
| MNT\_JSTICK\_SPD | 0 |  | 0 100 | 0 for position control, small for low speeds, 100 for max speed. A good general value is 10 which gives a movement speed of 3 degrees per second. |
| MNT\_MODE | 3 |  |  |  |
| MNT\_NEUTRAL\_X | 0 | deg | -180.00 179.99 | Mount roll angle when in neutral position |
| MNT\_NEUTRAL\_Y | 0 | deg | -180.00 179.99 | Mount tilt/pitch angle when in neutral position |
| MNT\_NEUTRAL\_Z | 0 | deg | -180.00 179.99 | Mount pan/yaw angle when in neutral position |
| MNT\_RC\_IN\_PAN | 0 |  | 0:Disabled 5:RC5 6:RC6 7:RC7 8:RC8 9:RC9 10:RC10 11:RC11 12:RC12 | 0 for none, any other for the RC channel to be used to control pan (yaw) movements |
| MNT\_RC\_IN\_ROLL | 0 |  | 0:Disabled 5:RC5 6:RC6 7:RC7 8:RC8 9:RC9 10:RC10 11:RC11 12:RC12 | 0 for none, any other for the RC channel to be used to control roll movements |
| MNT\_RC\_IN\_TILT | 6 |  | 0:Disabled 5:RC5 6:RC6 7:RC7 8:RC8 9:RC9 10:RC10 11:RC11 12:RC12 | 0 for none, any other for the RC channel to be used to control tilt (pitch) movements |
| MNT\_RETRACT\_X | 0 | deg | -180.00 179.99 | Mount roll angle when in retracted position |
| MNT\_RETRACT\_Y | 0 | deg | -180.00 179.99 | Mount tilt/pitch angle when in retracted position |
| MNT\_RETRACT\_Z | 0 | deg | -180.00 179.99 | Mount yaw/pan angle when in retracted position |
| MNT\_STAB\_PAN | 0 |  | 0:Disabled 1:Enabled | enable pan/yaw stabilisation relative to Earth |
| MNT\_STAB\_ROLL | 0 |  | 0:Disabled 1:Enabled | enable roll stabilisation relative to Earth |
| MNT\_STAB\_TILT | 0 |  | 0:Disabled 1:Enabled | enable tilt/pitch stabilisation relative to Earth |
| MOT\_SPIN\_ARMED | 70 |  |  |  |
| MOT\_TCRV\_ENABLE | 1 |  |  |  |
| MOT\_TCRV\_MAXPCT | 93 |  |  |  |
| MOT\_TCRV\_MIDPCT | 52 |  |  |  |
| OF\_PIT\_D | 0.12 |  |  |  |
| OF\_PIT\_I | 0.5 |  |  |  |
| OF\_PIT\_IMAX | 100 |  |  |  |
| OF\_PIT\_P | 2.5 |  |  |  |
| OF\_RLL\_D | 0.12 |  |  |  |
| OF\_RLL\_I | 0.5 |  |  |  |
| OF\_RLL\_IMAX | 100 |  |  |  |
| OF\_RLL\_P | 2.5 |  |  |  |
| PHLD\_BRAKE\_ANGLE | 3000 | cdeg | 2000 4500 | PosHold flight mode's max lean angle during braking in centi-degrees |
| PHLD\_BRAKE\_RATE | 8 | deg/s | 4 12 | PosHold flight mode's rotation rate during braking in deg/sec |
| PILOT\_ACCEL\_Z | 250 | cm/s/s | 50 500 | The vertical acceleration used when pilot is controlling the altitude |
| PILOT\_VELZ\_MAX | 250 |  |  |  |
| POSCON\_THR\_HOVER | 329 |  |  |  |
| RATE\_PIT\_D | 0.004 |  |  |  |
| RATE\_PIT\_I | 0.1 |  |  |  |
| RATE\_PIT\_IMAX | 1000 |  |  |  |
| RATE\_PIT\_P | 0.15 |  |  |  |
| RATE\_RLL\_D | 0.004 |  |  |  |
| RATE\_RLL\_I | 0.1 |  |  |  |
| RATE\_RLL\_IMAX | 1000 |  |  |  |
| RATE\_RLL\_P | 0.15 |  |  |  |
| RATE\_YAW\_D | 0 |  |  |  |
| RATE\_YAW\_I | 0.02 |  |  |  |
| RATE\_YAW\_IMAX | 1000 |  |  |  |
| RATE\_YAW\_P | 0.2 |  |  |  |
| RC\_FEEL\_RP | 25 |  |  |  |
| RC\_SPEED | 490 | Hz | 50 490 | This is the speed in Hertz that your ESCs will receive updates |
| RC1\_DZ | 30 | PWM | 0 200 | PWM dead zone in microseconds around trim or bottom |
| RC1\_MAX | 1989 | PWM | 800 2200 | RC maximum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC1\_MIN | 1087 | PWM | 800 2200 | RC minimum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC1\_REV | 1 |  |  |  |
| RC1\_TRIM | 1540 | PWM | 800 2200 | RC trim (neutral) PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC10\_DZ | 0 | PWM | 0 200 | PWM dead zone in microseconds around trim or bottom |
| RC10\_FUNCTION | 0 |  |  |  |
| RC10\_MAX | 1900 | PWM | 800 2200 | RC maximum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC10\_MIN | 1100 | PWM | 800 2200 | RC minimum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC10\_REV | 1 |  |  |  |
| RC10\_TRIM | 0 | PWM | 800 2200 | RC trim (neutral) PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC11\_DZ | 0 | PWM | 0 200 | PWM dead zone in microseconds around trim or bottom |
| RC11\_FUNCTION | 0 |  |  |  |
| RC11\_MAX | 1900 | PWM | 800 2200 | RC maximum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC11\_MIN | 1100 | PWM | 800 2200 | RC minimum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC11\_REV | 1 |  |  |  |
| RC11\_TRIM | 0 | PWM | 800 2200 | RC trim (neutral) PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC2\_DZ | 30 | PWM | 0 200 | PWM dead zone in microseconds around trim or bottom |
| RC2\_MAX | 1884 | PWM | 800 2200 | RC maximum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC2\_MIN | 1122 | PWM | 800 2200 | RC minimum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC2\_REV | 1 |  |  |  |
| RC2\_TRIM | 1500 | PWM | 800 2200 | RC trim (neutral) PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC3\_DZ | 30 | PWM | 0 200 | PWM dead zone in microseconds around trim or bottom |
| RC3\_MAX | 1961 | PWM | 800 2200 | RC maximum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC3\_MIN | 1168 | PWM | 800 2200 | RC minimum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC3\_REV | 1 |  |  |  |
| RC3\_TRIM | 1173 | PWM | 800 2200 | RC trim (neutral) PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC4\_DZ | 40 | PWM | 0 200 | PWM dead zone in microseconds around trim or bottom |
| RC4\_MAX | 2035 | PWM | 800 2200 | RC maximum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC4\_MIN | 1046 | PWM | 800 2200 | RC minimum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC4\_REV | 1 |  |  |  |
| RC4\_TRIM | 1521 | PWM | 800 2200 | RC trim (neutral) PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC5\_DZ | 0 | PWM | 0 200 | PWM dead zone in microseconds around trim or bottom |
| RC5\_FUNCTION | 0 |  |  |  |
| RC5\_MAX | 1016 | PWM | 800 2200 | RC maximum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC5\_MIN | 1009 | PWM | 800 2200 | RC minimum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC5\_REV | 1 |  |  |  |
| RC5\_TRIM | 1011 | PWM | 800 2200 | RC trim (neutral) PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC6\_DZ | 0 | PWM | 0 200 | PWM dead zone in microseconds around trim or bottom |
| RC6\_FUNCTION | 0 |  |  |  |
| RC6\_MAX | 1500 | PWM | 800 2200 | RC maximum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC6\_MIN | 1499 | PWM | 800 2200 | RC minimum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC6\_REV | 1 |  |  |  |
| RC6\_TRIM | 1500 | PWM | 800 2200 | RC trim (neutral) PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC7\_DZ | 0 | PWM | 0 200 | PWM dead zone in microseconds around trim or bottom |
| RC7\_FUNCTION | 0 |  |  |  |
| RC7\_MAX | 1500 | PWM | 800 2200 | RC maximum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC7\_MIN | 1499 | PWM | 800 2200 | RC minimum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC7\_REV | 1 |  |  |  |
| RC7\_TRIM | 1500 | PWM | 800 2200 | RC trim (neutral) PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC8\_DZ | 0 | PWM | 0 200 | PWM dead zone in microseconds around trim or bottom |
| RC8\_FUNCTION | 0 |  |  |  |
| RC8\_MAX | 1500 | PWM | 800 2200 | RC maximum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC8\_MIN | 1499 | PWM | 800 2200 | RC minimum PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RC8\_REV | 1 |  |  |  |
| RC8\_TRIM | 1500 | PWM | 800 2200 | RC trim (neutral) PWM pulse width in microseconds. Typically 1000 is lower limit, 1500 is neutral and 2000 is upper limit. |
| RCMAP\_PITCH | 2 |  | 1 8 | Pitch channel number. This is useful when you have a RC transmitter that can't change the channel order easily. Pitch is normally on channel 2, but you can move it to any channel with this parameter.  Reboot is required for changes to take effect. |
| RCMAP\_ROLL | 1 |  | 1 8 | Roll channel number. This is useful when you have a RC transmitter that can't change the channel order easily. Roll is normally on channel 1, but you can move it to any channel with this parameter.  Reboot is required for changes to take effect. |
| RCMAP\_THROTTLE | 3 |  | 1 8 | Throttle channel number. This is useful when you have a RC transmitter that can't change the channel order easily. Throttle is normally on channel 3, but you can move it to any channel with this parameter. Warning APM 2.X: Changing the throttle channel could produce unexpected fail-safe results if connection between receiver and on-board PPM Encoder is lost. Disabling on-board PPM Encoder is recommended.  Reboot is required for changes to take effect. |
| RCMAP\_YAW | 4 |  | 1 8 | Yaw channel number. This is useful when you have a RC transmitter that can't change the channel order easily. Yaw (also known as rudder) is normally on channel 4, but you can move it to any channel with this parameter.  Reboot is required for changes to take effect. |
| RELAY\_PIN | 13 |  | -1:Disabled 49:BB Blue GP0 pin 4 50:AUXOUT1 51:AUXOUT2 52:AUXOUT3 53:AUXOUT4 54:AUXOUT5 55:AUXOUT6 57:BB Blue GP0 pin 3 113:BB Blue GP0 pin 6 116:BB Blue GP0 pin 5 | Digital pin number for first relay control. This is the pin used for camera control. |
| RELAY\_PIN2 | -1 |  | -1:Disabled 49:BB Blue GP0 pin 4 50:AUXOUT1 51:AUXOUT2 52:AUXOUT3 53:AUXOUT4 54:AUXOUT5 55:AUXOUT6 57:BB Blue GP0 pin 3 113:BB Blue GP0 pin 6 116:BB Blue GP0 pin 5 | Digital pin number for 2nd relay control. |
| RNGFND\_FUNCTION | 0 |  |  |  |
| RNGFND\_GAIN | 0.8 |  | 0.01 2.0 | Used to adjust the speed with which the target altitude is changed when objects are sensed below the copter |
| RNGFND\_MAX\_CM | 700 |  |  |  |
| RNGFND\_MIN\_CM | 20 |  |  |  |
| RNGFND\_OFFSET | 0 |  |  |  |
| RNGFND\_PIN | -1 |  |  |  |
| RNGFND\_RMETRIC | 1 |  |  |  |
| RNGFND\_SCALING | 3 |  |  |  |
| RNGFND\_SETTLE\_MS | 0 |  |  |  |
| RNGFND\_STOP\_PIN | -1 |  |  |  |
| RNGFND\_TYPE | 0 |  |  |  |
| RSSI\_PIN | -1 |  |  |  |
| RSSI\_RANGE | 5 |  |  |  |
| RTL\_ALT | 2000 | cm | 200 8000 | The minimum alt above home the vehicle will climb to before returning.  If the vehicle is flying higher than this value it will return at its current altitude. |
| RTL\_ALT\_FINAL | 0 | cm | -1 1000 | This is the altitude the vehicle will move to as the final stage of Returning to Launch or after completing a mission.  Set to zero to land. |
| RTL\_LOIT\_TIME | 5000 | ms | 0 60000 | Time (in milliseconds) to loiter above home before beginning final descent |
| SCHED\_DEBUG | 0 |  | 0:Disabled 2:ShowSlips 3:ShowOverruns | Set to non-zero to enable scheduler debug messages. When set to show "Slips" the scheduler will display a message whenever a scheduled task is delayed due to too much CPU load. When set to ShowOverruns the scheduled will display a message whenever a task takes longer than the limit promised in the task table. |
| SERIAL0\_BAUD | 115 |  | 1:1200 2:2400 4:4800 9:9600 19:19200 38:38400 57:57600 111:111100 115:115200 256:256000 460:460800 500:500000 921:921600 1500:1500000 | The baud rate used on the USB console. Most stm32-based boards can support rates of up to 1500. If you setup a rate you cannot support and then can't connect to your board you should load a firmware from a different vehicle type. That will reset all your parameters to defaults. |
| SERIAL1\_BAUD | 57 |  | 1:1200 2:2400 4:4800 9:9600 19:19200 38:38400 57:57600 111:111100 115:115200 256:256000 500:500000 921:921600 1500:1500000 | The baud rate used on the Telem1 port. Most stm32-based boards can support rates of up to 1500. If you setup a rate you cannot support and then can't connect to your board you should load a firmware from a different vehicle type. That will reset all your parameters to defaults. |
| SIMPLE | 63 |  |  | Bitmask which holds which flight modes use simple heading mode (eg bit 0 = 1 means Flight Mode 0 uses simple mode) |
| SR0\_EXT\_STAT | 2 | Hz | 0 10 | Stream rate of SYS\_STATUS, POWER\_STATUS, MEMINFO, CURRENT\_WAYPOINT, GPS\_RAW\_INT, GPS\_RTK (if available), GPS2\_RAW (if available), GPS2\_RTK (if available), NAV\_CONTROLLER\_OUTPUT, and FENCE\_STATUS to ground station |
| SR0\_EXTRA1 | 4 | Hz | 0 10 | Stream rate of ATTITUDE, SIMSTATE (SITL only), AHRS2 and PID\_TUNING to ground station |
| SR0\_EXTRA2 | 4 | Hz | 0 10 | Stream rate of VFR\_HUD to ground station |
| SR0\_EXTRA3 | 2 | Hz | 0 10 | Stream rate of AHRS, HWSTATUS, SYSTEM\_TIME, RANGEFINDER, DISTANCE\_SENSOR, TERRAIN\_REQUEST, BATTERY2, MOUNT\_STATUS, OPTICAL\_FLOW, GIMBAL\_REPORT, MAG\_CAL\_REPORT, MAG\_CAL\_PROGRESS, EKF\_STATUS\_REPORT, VIBRATION and RPM to ground station |
| SR0\_PARAMS | 10 | Hz | 0 10 | Stream rate of PARAM\_VALUE to ground station |
| SR0\_POSITION | 2 | Hz | 0 10 | Stream rate of GLOBAL\_POSITION\_INT and LOCAL\_POSITION\_NED to ground station |
| SR0\_RAW\_CTRL | 2 | Hz | 0 10 | Stream rate of RC\_CHANNELS\_SCALED (HIL only) to ground station |
| SR0\_RAW\_SENS | 2 | Hz | 0 10 | Stream rate of RAW\_IMU, SCALED\_IMU2, SCALED\_IMU3, SCALED\_PRESSURE, SCALED\_PRESSURE2, SCALED\_PRESSURE3 and SENSOR\_OFFSETS to ground station |
| SR0\_RC\_CHAN | 2 | Hz | 0 10 | Stream rate of SERVO\_OUTPUT\_RAW and RC\_CHANNELS to ground station |
| SR1\_EXT\_STAT | 2 | Hz | 0 10 | Stream rate of SYS\_STATUS, POWER\_STATUS, MEMINFO, CURRENT\_WAYPOINT, GPS\_RAW\_INT, GPS\_RTK (if available), GPS2\_RAW (if available), GPS2\_RTK (if available), NAV\_CONTROLLER\_OUTPUT, and FENCE\_STATUS to ground station |
| SR1\_EXTRA1 | 2 | Hz | 0 10 | Stream rate of ATTITUDE, SIMSTATE (SITL only), AHRS2 and PID\_TUNING to ground station |
| SR1\_EXTRA2 | 2 | Hz | 0 10 | Stream rate of VFR\_HUD to ground station |
| SR1\_EXTRA3 | 2 | Hz | 0 10 | Stream rate of AHRS, HWSTATUS, SYSTEM\_TIME, RANGEFINDER, DISTANCE\_SENSOR, TERRAIN\_REQUEST, BATTERY2, MOUNT\_STATUS, OPTICAL\_FLOW, GIMBAL\_REPORT, MAG\_CAL\_REPORT, MAG\_CAL\_PROGRESS, EKF\_STATUS\_REPORT, VIBRATION and RPM to ground station |
| SR1\_PARAMS | 0 | Hz | 0 10 | Stream rate of PARAM\_VALUE to ground station |
| SR1\_POSITION | 2 | Hz | 0 10 | Stream rate of GLOBAL\_POSITION\_INT and LOCAL\_POSITION\_NED to ground station |
| SR1\_RAW\_CTRL | 2 | Hz | 0 10 | Stream rate of RC\_CHANNELS\_SCALED (HIL only) to ground station |
| SR1\_RAW\_SENS | 2 | Hz | 0 10 | Stream rate of RAW\_IMU, SCALED\_IMU2, SCALED\_IMU3, SCALED\_PRESSURE, SCALED\_PRESSURE2, SCALED\_PRESSURE3 and SENSOR\_OFFSETS to ground station |
| SR1\_RC\_CHAN | 2 | Hz | 0 10 | Stream rate of SERVO\_OUTPUT\_RAW and RC\_CHANNELS to ground station |
| STB\_PIT\_P | 4.5 |  |  |  |
| STB\_RLL\_P | 4.5 |  |  |  |
| STB\_YAW\_P | 4.5 |  |  |  |
| SUPER\_SIMPLE | 0 |  | 0:Disabled 1:Mode1 2:Mode2 3:Mode1+2 4:Mode3 5:Mode1+3 6:Mode2+3 7:Mode1+2+3 8:Mode4 9:Mode1+4 10:Mode2+4 11:Mode1+2+4 12:Mode3+4 13:Mode1+3+4 14:Mode2+3+4 15:Mode1+2+3+4 16:Mode5 17:Mode1+5 18:Mode2+5 19:Mode1+2+5 20:Mode3+5 21:Mode1+3+5 22:Mode2+3+5 23:Mode1+2+3+5 24:Mode4+5 25:Mode1+4+5 26:Mode2+4+5 27:Mode1+2+4+5 28:Mode3+4+5 29:Mode1+3+4+5 30:Mode2+3+4+5 31:Mode1+2+3+4+5 32:Mode6 33:Mode1+6 34:Mode2+6 35:Mode1+2+6 36:Mode3+6 37:Mode1+3+6 38:Mode2+3+6 39:Mode1+2+3+6 40:Mode4+6 41:Mode1+4+6 42:Mode2+4+6 43:Mode1+2+4+6 44:Mode3+4+6 45:Mode1+3+4+6 46:Mode2+3+4+6 47:Mode1+2+3+4+6 48:Mode5+6 49:Mode1+5+6 50:Mode2+5+6 51:Mode1+2+5+6 52:Mode3+5+6 53:Mode1+3+5+6 54:Mode2+3+5+6 55:Mode1+2+3+5+6 56:Mode4+5+6 57:Mode1+4+5+6 58:Mode2+4+5+6 59:Mode1+2+4+5+6 60:Mode3+4+5+6 61:Mode1+3+4+5+6 62:Mode2+3+4+5+6 63:Mode1+2+3+4+5+6 | Bitmask to enable Super Simple mode for some flight modes. Setting this to Disabled(0) will disable Super Simple Mode |
| SYSID\_MYGCS | 255 |  | 255:Mission Planner and DroidPlanner  252: AP Planner 2 | Allows restricting radio overrides to only come from my ground station |
| SYSID\_SW\_MREV | 120 |  |  | This value is incremented when changes are made to the eeprom format |
| SYSID\_SW\_TYPE | 10 |  |  |  |
| SYSID\_THISMAV | 1 |  | 1 255 | Allows setting an individual MAVLink system id for this vehicle to distinguish it from others on the same network |
| TELEM\_DELAY | 0 | s | 0 30 | The amount of time (in seconds) to delay radio telemetry to prevent an Xbee bricking on power up |
| THR\_ACCEL\_D | 0 |  |  |  |
| THR\_ACCEL\_I | 1 |  |  |  |
| THR\_ACCEL\_IMAX | 800 |  |  |  |
| THR\_ACCEL\_P | 0.5 |  |  |  |
| THR\_ALT\_P | 1 |  |  |  |
| THR\_DZ | 50 | PWM | 0 300 | The deadzone above and below mid throttle in PWM microseconds. Used in AltHold, Loiter, PosHold flight modes |
| THR\_MAX | 1000 |  |  |  |
| THR\_MID | 500 |  |  |  |
| THR\_MIN | 130 |  |  |  |
| THR\_RATE\_P | 0 |  |  |  |
| TRIM\_THROTTLE | 329 |  |  |  |
| TUNE | 7 |  | 0:None 1:Stab Roll/Pitch kP 4:Rate Roll/Pitch kP 5:Rate Roll/Pitch kI 21:Rate Roll/Pitch kD 3:Stab Yaw kP 6:Rate Yaw kP 26:Rate Yaw kD 56:Rate Yaw Filter 55:Motor Yaw Headroom 14:AltHold kP 7:Throttle Rate kP 34:Throttle Accel kP 35:Throttle Accel kI 36:Throttle Accel kD 12:Loiter Pos kP 22:Velocity XY kP 28:Velocity XY kI 10:WP Speed 25:Acro RollPitch kP 40:Acro Yaw kP 45:RC Feel 13:Heli Ext Gyro 38:Declination 39:Circle Rate 41:RangeFinder Gain 46:Rate Pitch kP 47:Rate Pitch kI 48:Rate Pitch kD 49:Rate Roll kP 50:Rate Roll kI 51:Rate Roll kD 52:Rate Pitch FF 53:Rate Roll FF 54:Rate Yaw FF 57:Winch | Controls which parameters (normally PID gains) are being tuned with transmitter's channel 6 knob |
| TUNE\_HIGH | 1000 |  | 0 32767 | The maximum value that will be applied to the parameter currently being tuned with the transmitter's channel 6 knob |
| TUNE\_LOW | 120 |  | 0 32767 | The minimum value that will be applied to the parameter currently being tuned with the transmitter's channel 6 knob |
| WP\_YAW\_BEHAVIOR | 2 |  | 0:Never change yaw  1:Face next waypoint  2:Face next waypoint except RTL  3:Face along GPS course | Determines how the autopilot controls the yaw during missions and RTL |
| WPNAV\_ACCEL | 250 | cm/s/s | 50 500 | Defines the horizontal acceleration in cm/s/s used during missions |
| WPNAV\_ACCEL\_Z | 50 | cm/s/s | 50 500 | Defines the vertical acceleration in cm/s/s used during missions |
| WPNAV\_LOIT\_JERK | 4000 |  |  |  |
| WPNAV\_LOIT\_SPEED | 1000 |  |  |  |
| WPNAV\_RADIUS | 200 | cm | 10 1000 | Defines the distance from a waypoint, that when crossed indicates the wp has been hit. |
| WPNAV\_SPEED | 650 | cm/s | 20 2000 | Defines the speed in cm/s which the aircraft will attempt to maintain horizontally during a WP mission |
| WPNAV\_SPEED\_DN | 150 | cm/s | 10 500 | Defines the speed in cm/s which the aircraft will attempt to maintain while descending during a WP mission |
| WPNAV\_SPEED\_UP | 250 | cm/s | 10 1000 | Defines the speed in cm/s which the aircraft will attempt to maintain while climbing during a WP mission |