en/MK-Parameter/Navi-Ctrl

19

LotharF
MikroKopter.de

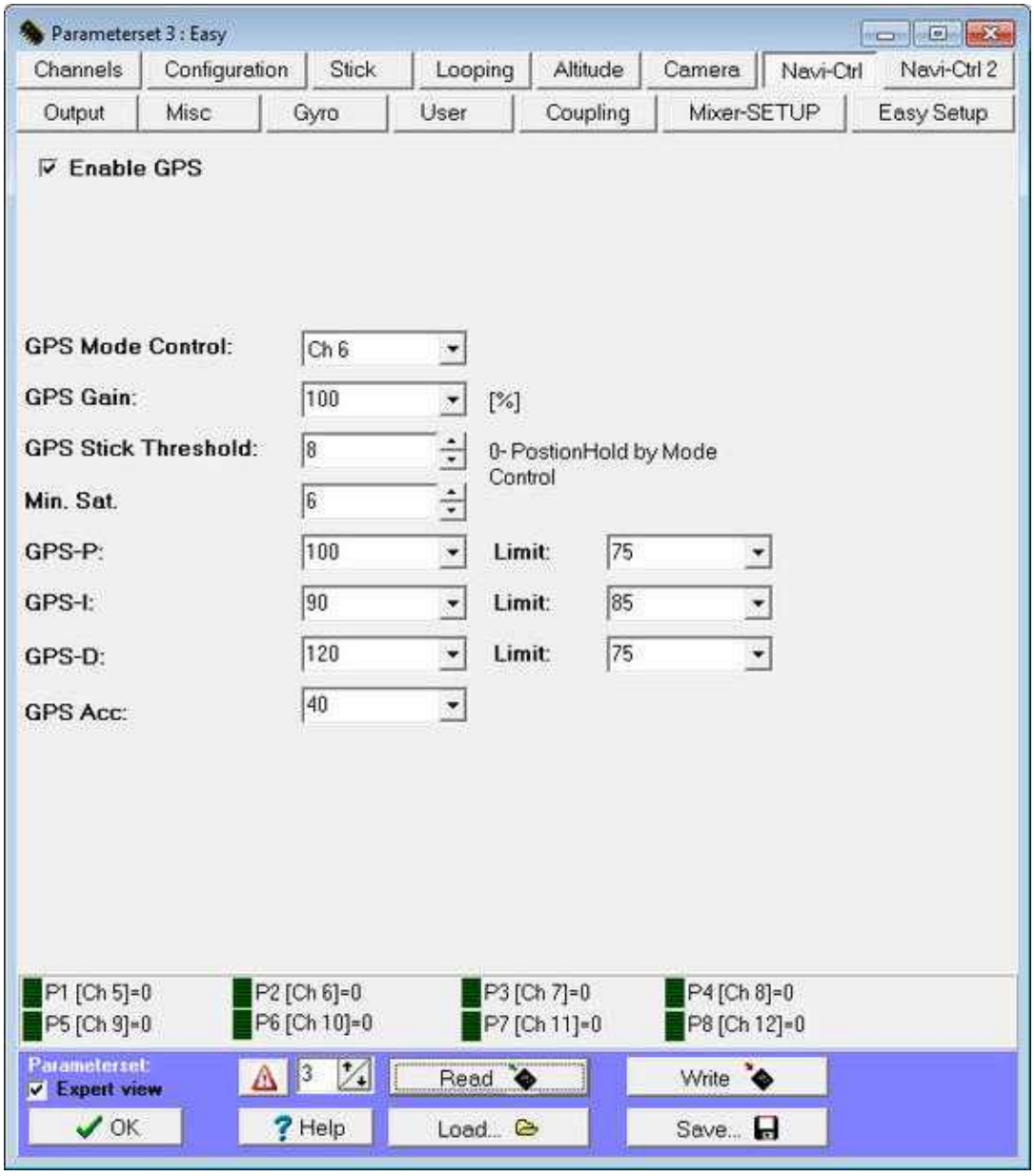
Quick selection
Open the description -> click Button

Channels	Configuration	Stick	Looping	Altitude
Camera	Navi-Ctrl	Navi-Ctrl 2	Output	Misc
Gyro	User	Coupling	Mixer-SETUP	Easy Setup

This page as an **PDF-Document**?
Click on that Symbol and wait a little moment... --->

Navi-Ctrl

- deutsch


Parameterset 3 : Easy
Channels
Configuration
Stick
Looping
Altitude
Camera
Navi-Ctrl
Navi-Ctrl 2
Output
Misc
Gyro
User
Coupling
Mixer-SETUP
Easy Setup
Enable GPS
GPS Mode Control:
Ch 6
GPS Gain:
100
[%]
GPS Stick Threshold:
8
0- PostionHold by Mode Control
Min. Sat.
6
GPS-P:
100
Limit:
75
GPS-I:
90
Limit:
85
GPS-D:
120
Limit:
75
GPS Acc:
40
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
Parameterset:
Expert view
3
Read
Write
OK
Help
Load...
Save...

If a GPS-System is used on the Kopter the function of the GPS system has to be set here.

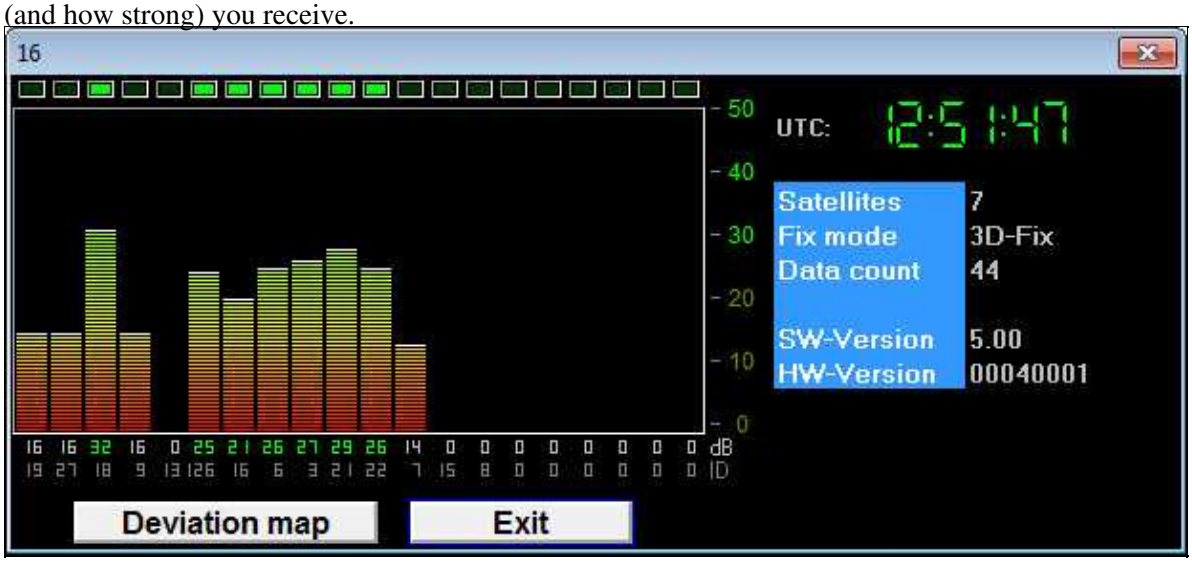
- **Enable GPS**
  Lock/unlock the GPS in the software (applies to both Navi-Ctrl tabs).
- **GPS Mode Control**
  Can be set up with fixed values ??or to a potentiometer. Fixed values ??of:
  0-99 means no GPS support (**Free**),
  100-199 Postion Hold (**PH**),
  200-250 Coming Home (**CH**).
  With a set up of a poti for example can be assigned a triple switch to the transmitter.
  The switching sequence is: Free, PositionHold (PH), ComingHome (CH).
- **GPS Gain**
  Specifies how much the GPS works. Is it too large, the position swings strongly.

- **GPS Stick Threshold**
  So you can set the threshold for PositionHold to log a new position.
  If you set it to 0 it's not signed with the stick but only by turning the mode switch:
  You fly to the desired location and turn on PH. Then you can play with the stick and the MK will always be on

the target position. Especially in windy conditions it can be prevented so that the MK is not drifting.

- **Min. Sat**
  Minimal amount of satellites which must be received by the GPS to activate the GPS functions (Sat-Fix).
  For a 3D-Fix you must have a minimum of 4 satellites. Reliable values ??are obtained by position from 6 satellites.
  The more satellites are received, the greater the GPS accuracy.

  - INFO: See the satellites in Kopter-Tool.
    If you "click" on the button ->MKGPS in the Koptertool you can see how many satellites (and how strong) you receive.



  Dont do this during flight! Otherwise you can crash!

- **GPS-P**
  P-share of the control. Influence of distance on the GPS controller (Bigger = more roll when position deviation).
  Imagine the action which is like a virtual bungee cord attached on one side to the MikroKopter and on the other side to the target position.
  It pulls the MikroKopter always to the target position the more the further the Kopter is away from the target point. The parameter P determines the strength of the bungee.
  Is the parameter small, the bungee is weak - is the parameter big, the bungee is stronger. If the bungee cord is to strong the controller leads to swing.

  - **(GPS-P) Limit**
    Limits the potency of the parameter GPS-P.
    This parameter limits the tractive force of the virtual bungee cord between the MikroKopter and the target position. With the increasing distance to the target and the rising proportional tractive force it would be too great from a certain point of distance. The bungee cord is only

an example for a better understanding.
IIn the reality the flight attitude of the MikroKopter causes the attraction to the target. If this flight attitude is getting to large the Kopter sags immediatly. To prevent those situation therefore is the limitation of the P-effect.

- **GPS-I**
I-share of the control. Eliminates the permanent position deviation in the wind (larger = stronger tendency for prolonged position deviation).
In relation to the bungee cord these parameter works like a memory. The longer the position deviation, the stronger pulls the bungee cord into the direction of the target.

  - **(GPS-I) Limit**
  Limits the potency of the parameter GPS-I.
  In that way the duration of the memory is set.
- **GPS-D**
D-share of the control. Influence of speed on the GPS controller (Bigger = slower movement).

  - Influence of the speed to the control. (bigger = stronger deceleration according to each movements) Imagine the effect like a virtual friction, because the MK tries to counteract its own movement. That is important because without this friction at the virtual bungee cord the MK would swing within its P-share. The greater the parameter D, the stronger slows down the MK each movement. Is the parameter to big the MK twitches back and forth because of the measurement noise going through the control.

  - **(GPS-D) Limit**
  Limits the potency of the parameter GPS-D.
- **GPS-Acc**
Support of the position by the ACC sensors. If you push away the MikroKopter it reacts quickly.
The effect of this parameter is analog to the GPS-D. But here the reaction is way faster.

If you want to change the speed in which for example waypoints or ComingHome it's flown that can be set up with changed values of GPS-P and GPS-d.
N O T E:
Increase speed = increase GPS-P + decrease GPS-D.
Decrease speed = decrease GPS-P + increase GPS-D.

Example:
In the standard settings GPS-P and GPS-d to 90 are set up. The speed here is approx. ~6m/s for the waypoints or ComingHome which it's be flown at that time.
(also applies to the max. speed for a FollowMe transmitter which can be followed).
If you change the values for GPS-P to 100 and GPS-D to 60, the speed will change to ~8-9m/s.

Conversion of m/s into km/h => m/s * 3,6 = km/h (6m/s * 3,6 = 21,6km/h).

Attention: The values ??should be changed in small steps. The values ??should not be too big / small. Here the MikroKopter could also go into descent flight.
You can check the speed during the flight, e.g. in the telemetry display of a Graupner HoTT transmitter or a JetiBox oder. or when there is a data connection between the MikroKopter and the PC in the KopterTool it is displayed in OSD.

Some of these sizes you can get while experimenting with the settings to a potentiometer to get the optimal values out of a flight : Info.