

en/MKGPS-V3

6

LotharF
MikroKopter.de

Inhaltsverzeichnis

<u>1 MKGPS V3</u>	1/6
<u>2 Video: Assembling Set Navigation</u>	2/6
<u>3 Features</u>	3/6
<u>3.1 Glonass / BeiDou</u>	3/6
<u>3.2 GPS Info</u>	4/6
<u>3.3 Amplifier with SAW Filter</u>	5/6
<u>3.4 External Compass</u>	5/6
<u>4 NMEA</u>	6/6

1 MKGPS V3

The MKGPS V3 is a new GPS-Receiver for the Mikrokopter. It can receive and evaluate in parallel also the Russian GLONASS or the Chinese [BeiDou](#) satellite system in addition to the usual American GPS satellites. This increases, particularly in areas with inadequate GPS coverage or signal shading (mountains, high-rise buildings), the satellites availability for navigation, considerably.

For suppressing external interference sources (such as video transmitter), the GPS receiver has been equipped with an RF preamplifier and a high-frequency SAW filter.

(**INFO:** MKGPS V3 can be used since software version V2.08 for FlightCtrl and NaviCtrl => [Download](#))

Together with a [NaviCtrl](#):

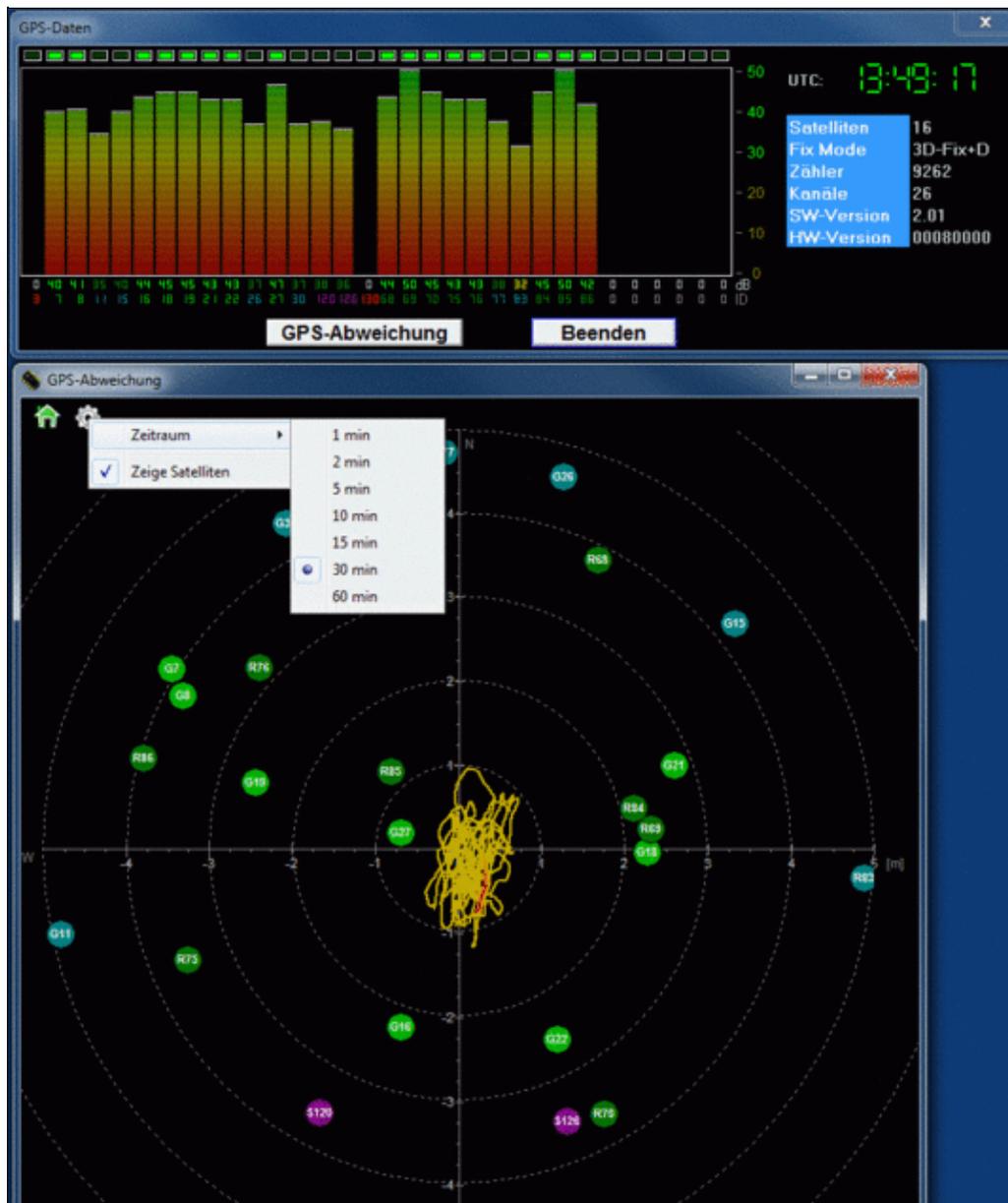
- the position can be held (Position-Hold or PH)
- it can be flown back to the start point (Coming Home or CH)
- heading to [WayPoints \(Waypoints\)](#)
- the flight route can be [logged](#) on SD card
- the actual position can be displayed on the 'OSD'-Map in the [KopterTool](#)
- distance and speed can be displayed in the [Graupner HoTT-Telemetry](#)
- the camera can be focused to a specific point: [PointOfInterest](#) (POI)

2 Video: Assembling Set Navigation

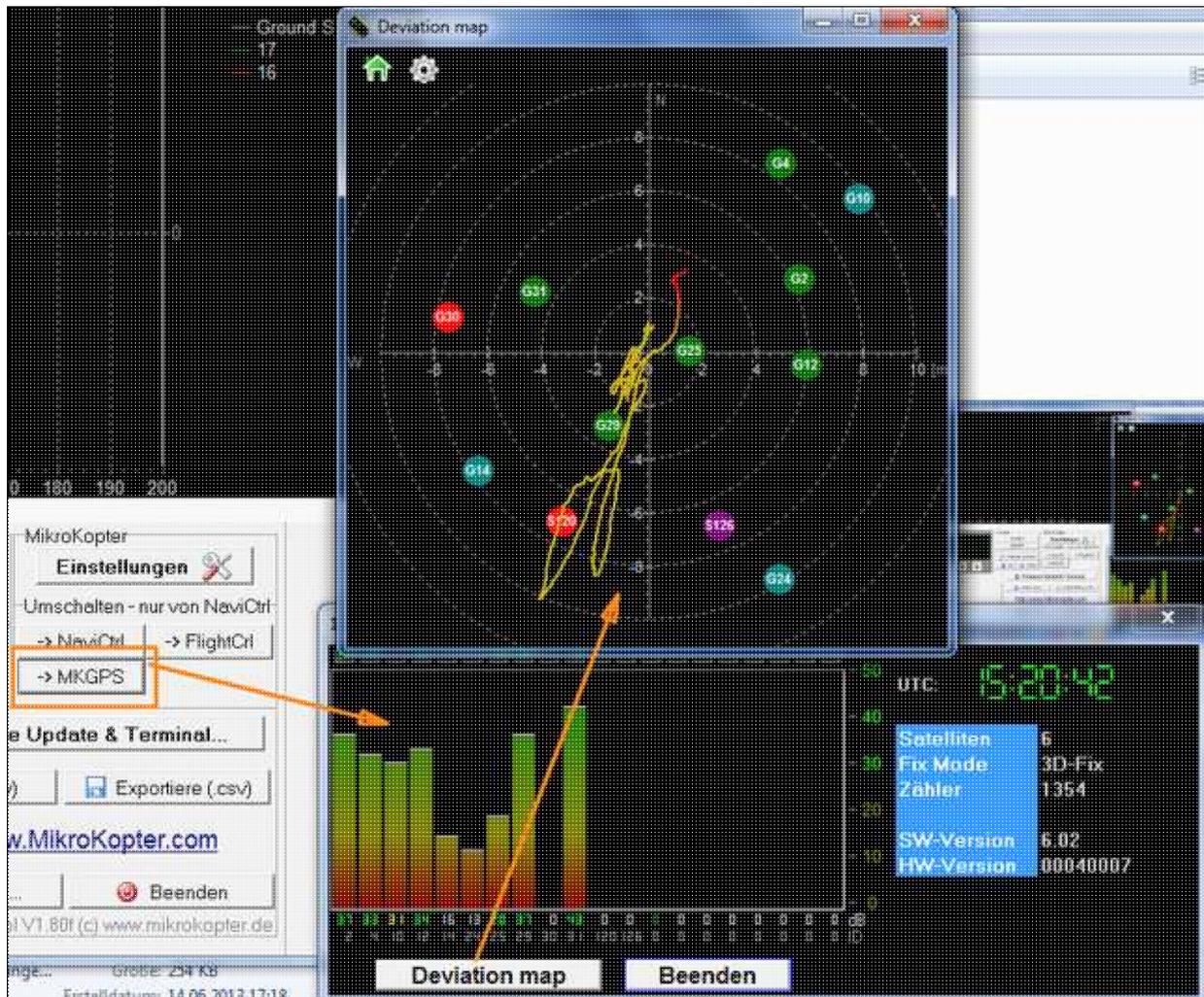
3 Features

3.1 Glonass / BeiDou

The main difference to the old MK GPS V2 is, that besides **GPS** the Russian system **Glonass** and the Chinese **BeiDou** system are also supported. In this way a much higher satellite coverage is guaranteed. Especially in areas without adequate GPS coverage (i.e. in valleys), it brings significant improvements.



3.2 GPS Info



Via the Koptertool can be displayed:

- the actual GPS divergency (MK need to stand on the ground)
 - ◆  the center position can be moved by right-clicking
- the current signal strength of the satellites
(Note: outside, at least one satellite should have 50dB signal strength.
A [GPS-Shield](#) is recommended for a better reception.)
- Position of the satellites in the sky:
 - ◆ light-green satellites: Sat. is used with SBAS-correction data for the navigation
 - ◆ dark-green satellites: Sat. is used without SBAS-correction data for the navigation
 - ◆ turquoise satellites: Sat. is not used yet for navigation
 - ◆ red satellites: signal is bad or Sat. is not useable
 - ◆ lila satellites: transmits SBAS-correction data

GPS Navigation-Satellites have the letter "G", SBAS-Satellites "S".

The number is the ID of the satellite (PRN Code).

Details about the satellite is also be shown by moving the mouse over the satellite.

 **Note:** If that is in use, the [KopterTool](#) directly accesses the GPS module and the [NaviCtrl](#) reports "Error: No GPS Communication"

3.3 Amplifier with SAW Filter

The receiver has been equipped with an RF preamplifier and a high-frequency SAW filter. This filters interferences from video transmitter.

3.4 External Compass

You can glue the external compass from below into the module - the appropriate spot is intended.

4 NMEA

Since the software version 2.00a for the NaviCtrl the **NMEA** format also can be given via the Ublox module. (i.e. for cameras with data-logging)

The data can be taken via the *Debug* connection PIN9 at the [NaviCtrl](#).

IMPORTANT: Only with a plugged in microSD-card (max. 2GB / FAT16) into the NaviCtrl the NMEA data can be used.

A file "settings.ini" will be automatically created from the NaviCtrl, that provides the required parameter.

If a microSD-card has been already used in the NaviCtrl, the existing Settings.ini **must** be deleted after a software update, so that a new one can be created with the required parameter.



See also:

- <http://www.kowoma.de/gps/zusatzerklaerungen/NMEA.htm>
- <http://aprs.gids.nl/nmea/>

-
- [KategorieMK-Baugruppe/de](#)

LED Status	
CAM or EXT1 or EXT2	Ereignis
	Schaltausgang nicht aktiv
	Schaltausgang aktiv