

# **en/GPXViewer**

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# 1 GPX-Viewer

The GPX-Viewer is a simple Tool for the PC to display GPX-Logfiles recorded by the Mikrokopter

## Funktionen


- Display of all telemetry data of the Kopter
- Errors shown colored(e.g. deviations of he magnetic value)
- Statusbits of the Mikrokopter will be evaluated
- GPX-file can be exported to Google Earth
- Additional Information from the GPX-File can be displayed (e.g Settingsinfo, Licenseinfo, Firmwareinfo)
- units will be added to the data and converted if possible (e.g. Altitude)
- You can build own Charts of the values in the GPX-file
- The columns can be re-aligned
- The [GeoData](#) can be exported to **Agisoft Photoscan** und **Pix4D**


## 2 Download

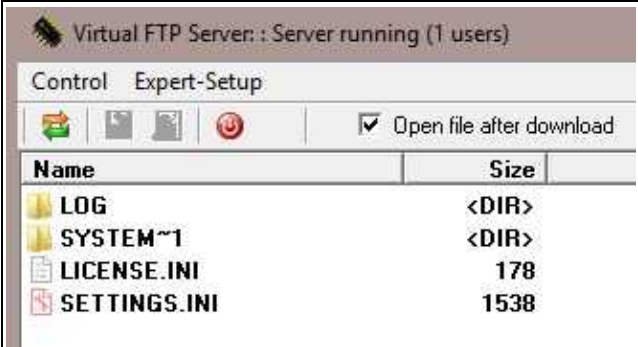
You can download the latest Version of the GPX-Viewer here: [Download GPX-Viewer](#)

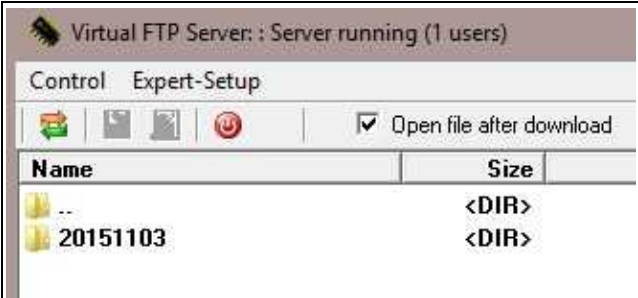
### 3 Getting the Logfile

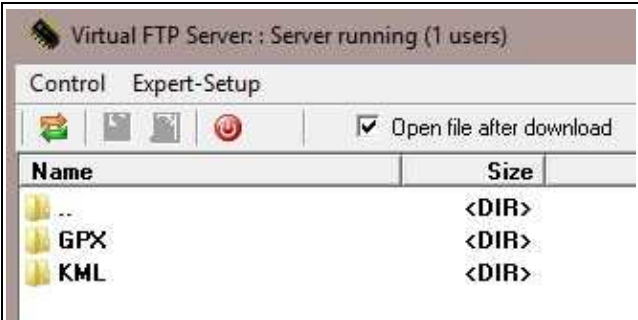
The flightdata are stored on the SD-card on the [NaviCtrl](#)(see here). If there is no SD-card plugged into the [NaviCtrl](#), no data will be recorded. To load the logfile from your Kopter it has to be connected to you PC. Therefore you can use the MK-USB.

 Be aware: You only can use SD-cards with a capacity of max 2GB. And it has to be FAT16 formatted!

In the [KopterTool](#) you see this this button . After clicking on this button an explorer opens where you can download the desired logfile.

	In the main folder of the SD-card you see the settings.ini, a folder for the logfiles and more possible files. Here you click on the folder <b>LOG</b> .
---	--


	In this subdirectory you see folders which names contains the dates of the flights. With a double-click on the desired folder you get to the next subdirectory.
---	---

	Here you always find 2 folders. GPX and KML. To get to the logfiles, you double-click on the folder <b>GPX</b> .
---	--

Virtual FTP Server : Server running (1 users)	
Control Expert-Setup	
<input checked="" type="checkbox"/> Open file after download	
Name	Size
..	<DIR>
15110300.GPX	942756
15110301.GPX	471680
15110302.GPX	138576

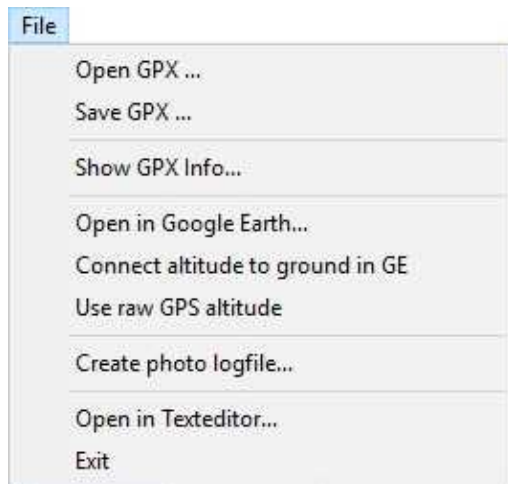
In this directory you find the recorded logfiles. If the Kopter recorded more flights on that day, you will find more logfiles in this directory. Just like the previous folders the names of the logfiles contains the different times of the flights.

To download the logfile to your PC you mark one file and click on the small disc-symbol. Now the file will be downloaded to your PC.

 For larger files the download can take several minutes. If you want to download faster, you have to remove the SD-card from the [NaviCtrl](#) and read it directly with your PC.

# 4 The Menu

## 4.1 File



### 4.1.1 Open GPX

- -> To open a logfile (\*.GPX)

### 4.1.2 Save GPX

- -> To save a logfile as CSV

### 4.1.3 Show GPX

- -> Shows information about the opened logfile (e.g. occurred errors)

### 4.1.4 Open in Google Earth

- -> Opens Google Earth and displays the flight

### 4.1.5 Connect altitude to Ground in GE

- -> With this option activated, the height will be connected to the ground in Google Earth.

### 4.1.6 Use raw GPS altitude

- -> With this option activated, Google Earth is using the recorded GPS-height for the display instead of the value recorded by the pressure-sensor.

### 4.1.7 Create photo logfile ...

- -> To create an export-file for **Agisoft Photoscan** and **Pix4D**



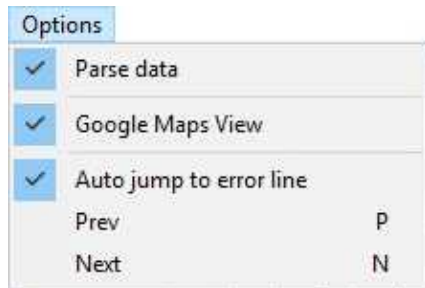


-> You can simply create an own chart and add the desired values here

## 4.2.2 Select chart files

-> Displays charts located in the mainfolder of the GPX-Viewer.

## 4.3 Options



### 4.3.1 Parse data

-> Measured Values will be adjusted for a better display.

### 4.3.2 Google Maps View

-> Flight will be displayed on a Google Maps card.

### 4.3.3 Auto jump to error line

-> If there is a recorded error in the logfile, the GPX-Viewer jumps to the location of the first error.

### 4.3.4 Prev

-> Jumps to the previous error

### 4.3.5 Next

-> Jumps to the next Error

## 4.4 Windows



#### **4.4.1 Show all Charts ...**

-> Shows all Charts

#### **4.4.2 Hide all Charts ...**

-> Hides all Charts

- You can activate / deactivate single charts as well underneath this option.

## 5 The logfile

Lat

+53,2855441

Value for the Latitude shown in decimal degree

Lon

+7,4837172

Value for the Longitude shown in decimal degree

ele

0,32 m

Hight-value of the GPS

ele\_raw

0,62 m

Raw Hight-value of the GPS

time

2015-11-03T13:16:59,4Z

UTC time of the GPS

sat

15

Number of received Satellites

Altimeter

2,40 m

Barometric height measured by the pressure sensor

Variometer

-7

rate of rising/falling (in m/s)

Course

270 °

GPS course over ground (independent from the compass of the MK)

GroundSpeed

0,0 m/s

ground speed in m/sec

VerticalSpeed

0,0 m/s

Vertical Speed in m/s

FlightTime

8:45

Flight duration in seconds

Voltage

22,7 V

Lipo voltage in [V]

Current

8,7 A

Lipo Current in [A]

Capacity

2385 mAh

Capacity in [mAh]

RCQuality

191

Quality of the PPM-Signal (not the signal strength in case on 2,4GHz receiver!)

Compass

146 | 149 | 147,4 | 147,7

First value: Yaw Gyro stabilized Compass signal  
Second value: Compass signal (raw)  
Third value: Compass setpoint (corrected with declination)  
Fourth value: Gyro Compass corrected (declination)

NickAngle

1,8 °

actual Nick-angle in [°]

RollAngle

0,4 °

actual Roll-angle in [°]

NCFlag

0xD1: FREE MANUAL

Actual GPS-status

FCFlags2

0x00,0x00: MOT OFF NOFLY

Actual FlightCtrl status

Gas

105,005

First value: actual gas value  
Second value: estimated hoover gas

ErrorCode

0: OK

Display of the different [ErrorCodes](#)

TargetBearing

0 °

Direction to the Target

TargetDistance  
0,0 m

Distance to the Target

MotorCurrent  
5,6,6,8,8,8,8,4

current of the BL-Ctrls 1-12 in [0,1A]

BL\_Temperature  
38,41,42,39,37,33,36,38

temperature of the BL-Ctrls 1-12 in [1°C]

Speak  
STARTING

the sentence that the transmitter should speak

MagnetField



95 %

strength on the current magnet field in [%]. This is compared to the field during calibration. Should be at ~100% after calibration.

MagnetInclination

69,00

Actual measured inclination of the magnetic (compass) vector ; inclination error compared to the theoretic inclination at your location

MotorNOK

0,0,0,0,0,0,0,0

"Motor Not Okay" counter for each motor. counts if a motor is blocked for example.

AvailableMotorPower

100 %

available maximum power of the BL-Ctrls (255 = 100%)

FC\_I2C\_ErrorCounter

0

counter of Errors on the I2C bus to the BL-Ctrls

FC\_SPI\_ErrorCounter

0

counter of Errors on the SPI bus

AnalogInputs

17,1023,68,16

free analog inputs of the NC (1024 = 3,3V)

Servo

0,144,0

First value: (Poti-) Setpoint for the Nick Servo (Raw)

Second value: (Poti-) Setpoint for the Roll Servo (Raw)

Third value: POI-Nick control (Or Waypoint-Nick Setpoint) in [°]

WP

---,0,0,0

First value: Name of the actual target-Waypoint (e.g. P12)

Second value: Number of the actual target-Waypoint

Third value: Amount of all Waypoints

Fourth value: Actual value of the Waypoint event

ShutterCnt

0

Shutter counter

RCSticks

0,1,-2,-44,0,144,0,126,0,126,0,126

current values of the RC-Sticks in this order: Nick; Roll ; Yaw ; Gas ; Poti 1-Poti8

GPSInfo

50,159,3

First value: GPS-Update-Rate in 0.1Hz (50 = 5,0Hz)

Second value: GPSData\_Flags

Third value: Type of Sat-fix

GPSSticks

0,0,0,''

current influence of the GPS-control: Nick ; Roll ; Yaw ;

### GPS-Modes:

'-' = no GPS fix

'/' = off

'?' = Coming home, but home Position unknown (goes to PH then)

'H' = Coming home

'W' = Flying Waypoints

'D' = Dynamic Position Hold

'P' = Position Hold

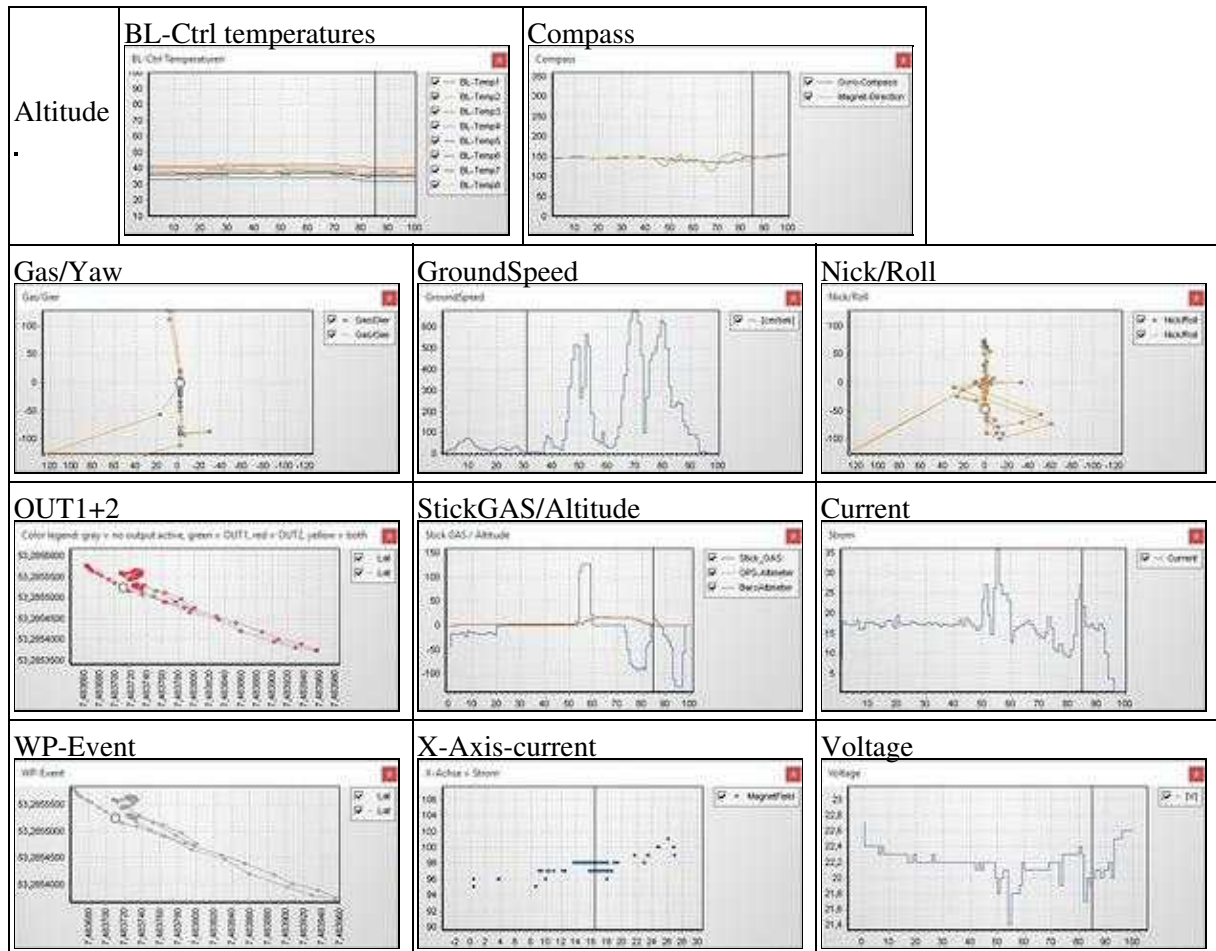
'm' = Manual controlled



# 6 Charts

You can display specific values of the recorded flight in a graphic. At the startup of the GPX-Viewer this value will be opened automatically. If not you can activate one specific Value or all under the "Windows" tab.

Following charts are already included:



## 6.1 create own Graphs

⚠ The .ini - file name must begin with "Charts-".

### 6.1.1 Magnetfield over Current

For example in the configuration file: "Charts-[MagnetFehler](#).ini" Here is the magnet field drawn over the current.

- [Chart1] ChartX = "Current" ChartYMax = 140 ChartYMin = 60

[ChartType](#) = "Point"

[ChartName](#) = "X-Achse = Strom"

[SeriesIdent](#) = "[MagnetField](#)"

## 6.1.2 Example: show the capacity

Create a "Charts-Capacity.ini" with the following content:

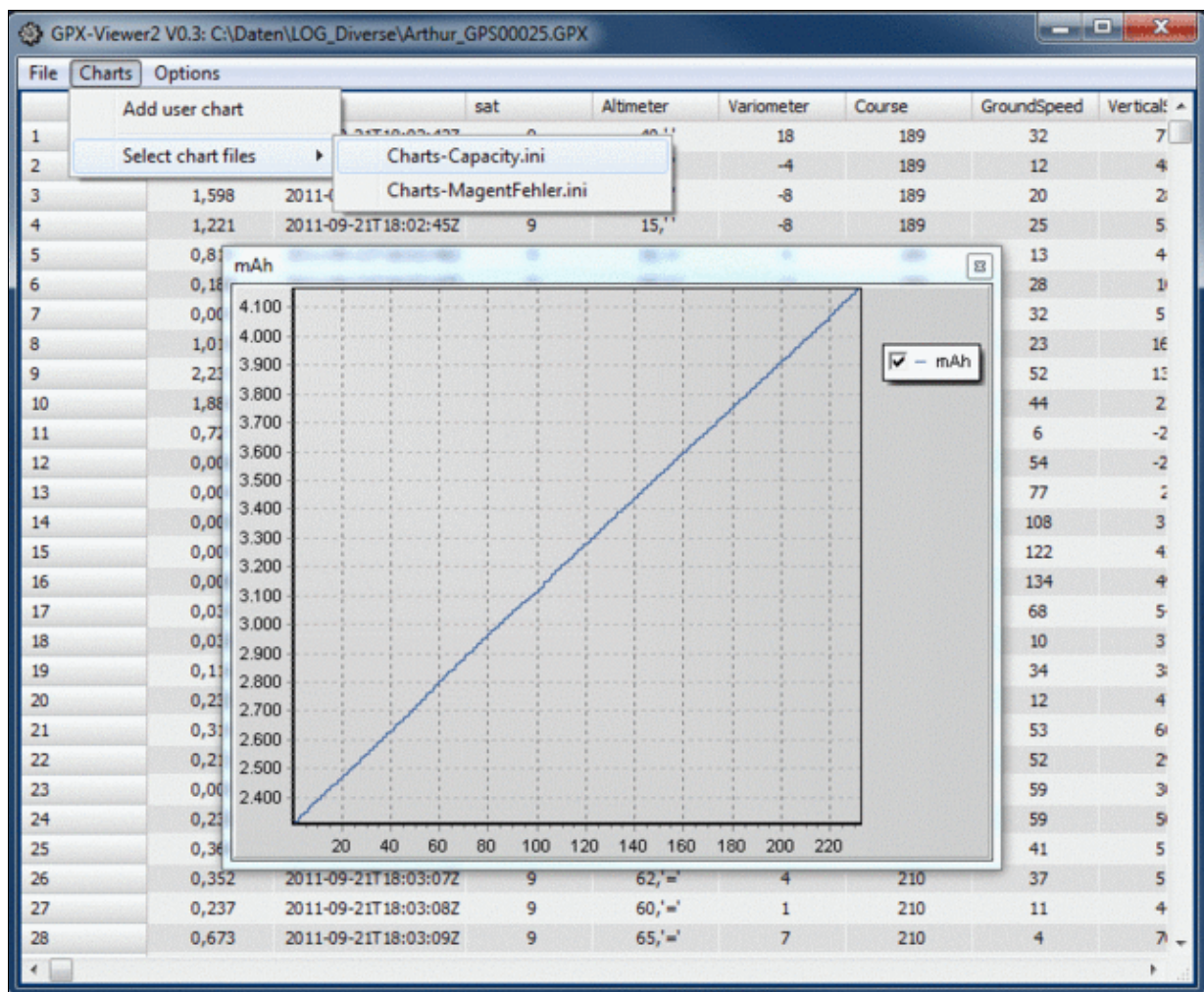
```
[Chart1]
```

```
ChartName = "mAh"
```

```
Series1Ident = "Capacity"
```

```
Series1Name = "mAh"
```

That shows the used capacity over the flight time.





## 7 Export Geodata

In the newest version of the GPX-Viewer it is possible to export the Geodata in the correct format to **Pix4D** and **Agisoft Photoscan**.

**⚠ Please use our [CamTriggerTool](#) when using a [FlightCtrl](#) V3 with (or without) external hot shoe adapter !**

How to:

- Click on File ->Create photo logfile...



In the following window you set the row, where the first picture was taken. You can see this under the column [ShutterCnt]

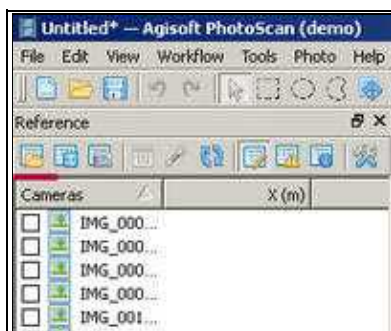


Below you choose the first Photo which was made in the Waypoint flight.

Now you have to name the output file.

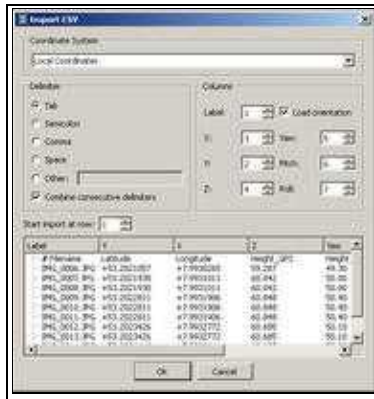
From here on it continues in the appropriate program.

### 7.1 Agisoft Photoscan



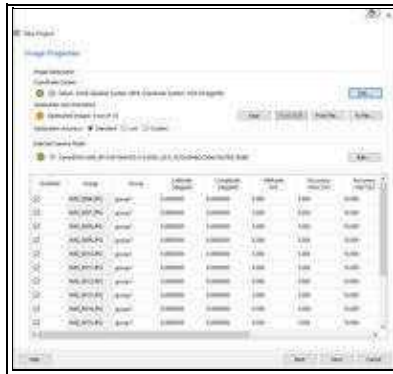
Are the photos loaded into **Agisoft Photoscan** click in the Tab "Reference" on the symbol for the import of Geoinformation.



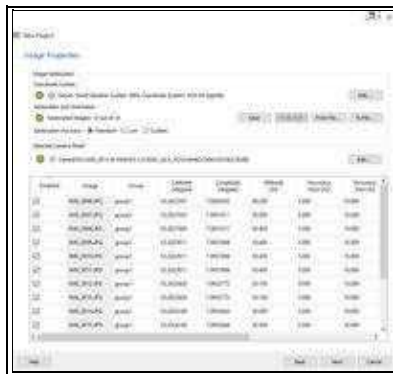


Here the program provides the possibility to choose how the import file looks like.

## 7.2 Pix4D



Are Photos without geoinformation loaded into **Pix4D**, it looks like this



With a click on "From File..." you can load the file you created with the GPX-viewer. When its done, you get a green ckeck mark as confirmation.

<http://wiki.mikrokopter.de/GPX>