en/GPXViewer

25

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Inhaltsverzeichnis

1 GPX-Viewer 1/23

2 Download 2/23

3 Getting the Logfile 3/23

4 The Menu 5/23
4.1 File 5/23
4.1.1 Open GPX 5/23
4.1.2 Save GPX 5/23
4.1.3 Show GPX 5/23
4.1.4 Open in Google Earth 5/23
4.1.5 Connect altitude to Ground in GE 5/23
4.1.6 Use raw GPS altitude 5/23
4.1.7 Create photo logfile 5/23
4.1.8 Open in Texteditor 6/23
4.1.9 Exit 6/23
4.2 Charts 6/23
4.2.1 Add user chart 6/23
4.2.2 Select chart files 7/23
4.3 Options 7/23
4.3.1 Parse data 7/23
4.3.2 Google Maps View 7/23
4.3.3 Auto jump to error line 7/23
4.3.4 Prev 7/23
4.3.5 Next 7/23
4.4 Windows 7/23
4.4.1 Show all Charts 8/23
4.4.2 Hide all Charts 8/23

5 The logfile 9/23

6 Charts 19/23
6.1 create own Graphs 19/23
6.1.1 Magnetfield over Current 19/23
6.1.2 Example: show the capacity 20/23

7 Export Geodata 22/23
7.1 Agisoft Photoscan 22/23
7.2 Pix4D 23/23

1 GPX-Viewer

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

Funktions

- 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-alligned
- 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**

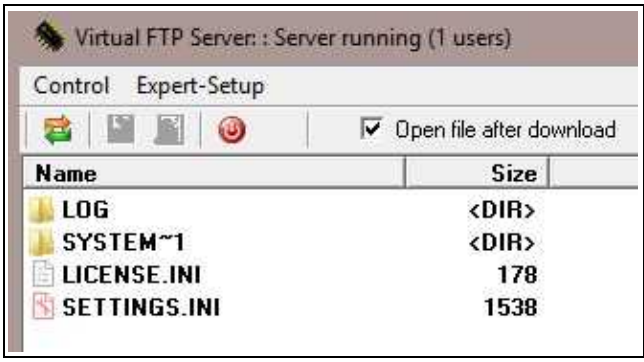
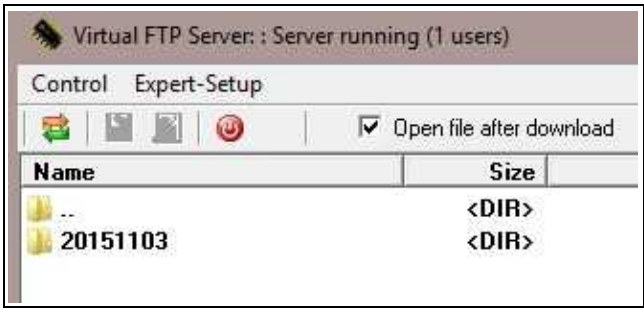
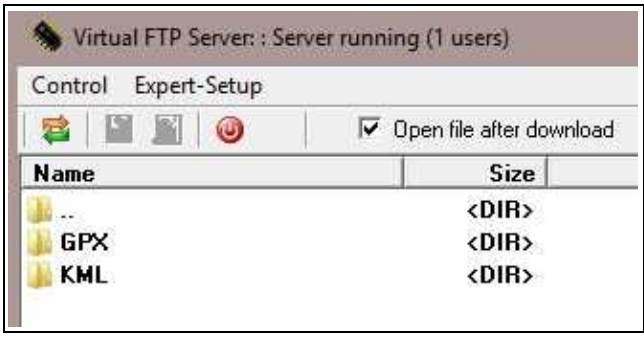
3 Getting the Logfile

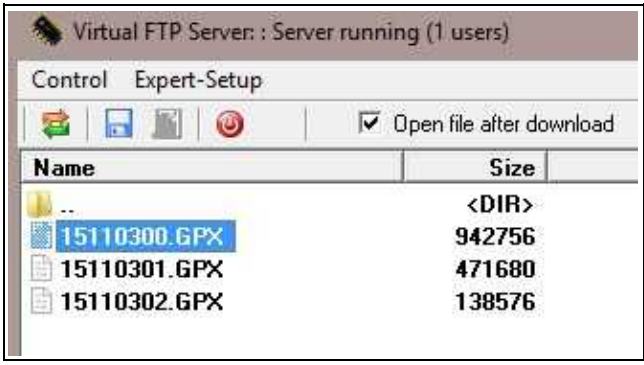
The flightdata are stored on the SD-card on the NaviCtrl(see here). If there is no SD-card plugged into the NaviCtrl, no data will be recorded. To load the logfile from your Kopter it has to be connected to you PC. Therefore you can use the MK-USB.

⚠ 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 **LOG**.
	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 **GPX**.

	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. occured 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**

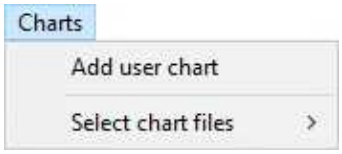
4.1.8 Open in Texteditor ...

- -> Opens the GPX-file in a texteditor

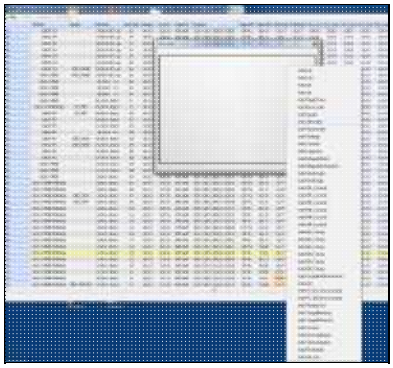
4.1.9 Exit

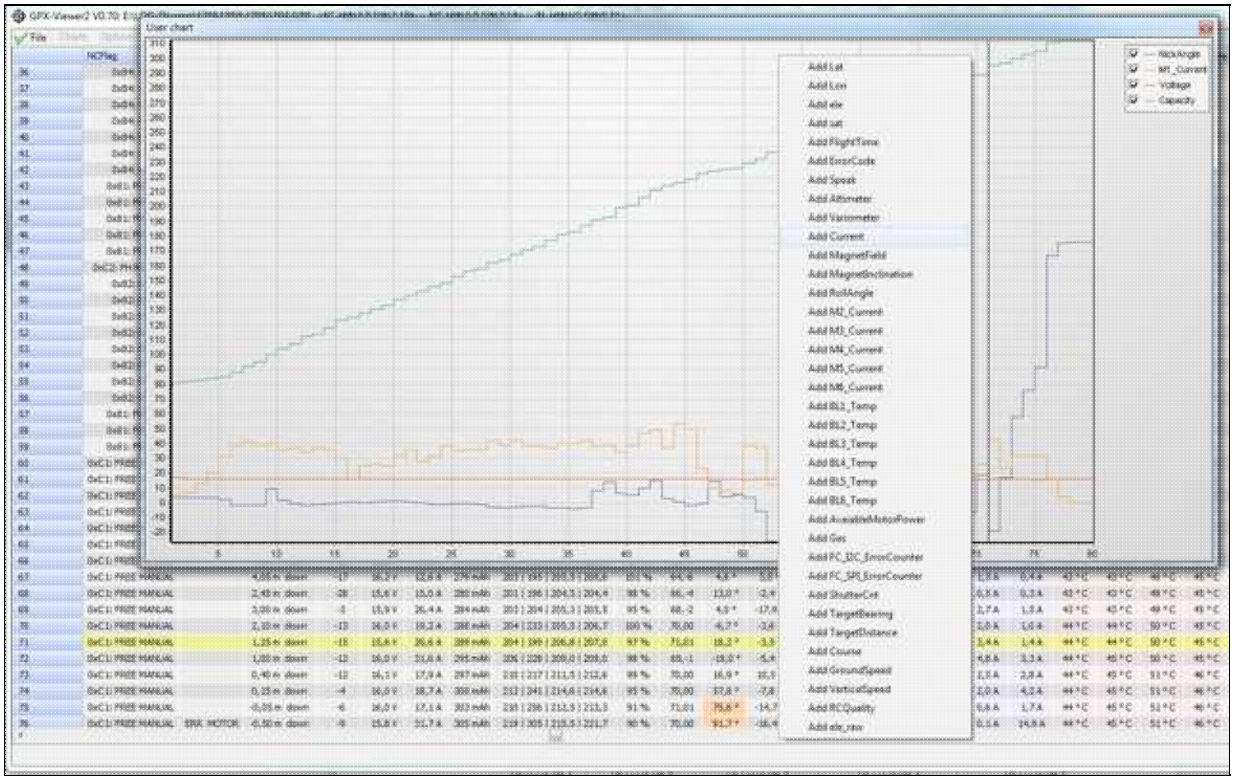
- -> Closes the GPX-Viewer

4.2 Charts



4.2.1 Add user chart



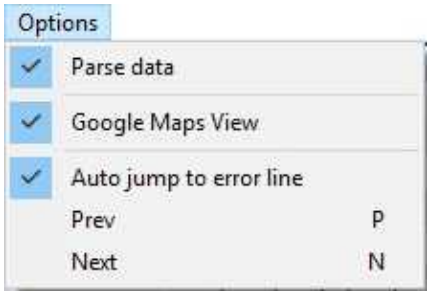


-> You can simply create an own chart and add the desired values here

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 ...

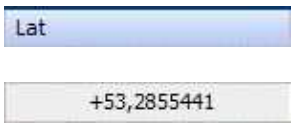
-> Shows all Charts

4.4.2 Hide all Charts ...

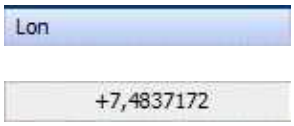
-> Hides all Charts

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

5 The logfile



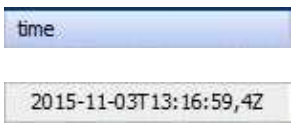
Value for the Latitude shown in decimal degree



Value for the Longitude shown in decimal degree

Hight-value of the GPS

Raw Hight-value of the GPS



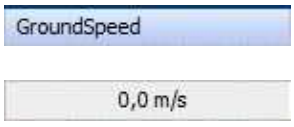
UTC time of the GPS

Number of received Satellites

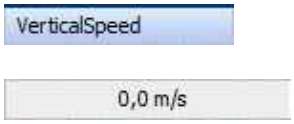
Barometric height measured by the pressure sensor

rate of rising/falling (in m/s)

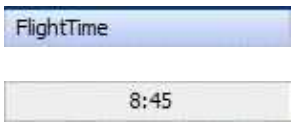
GPS course over ground (independent from the compass of the MK)



ground speed in m/sec



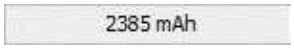
Vertical Speed in m/s



Flight duration in seconds

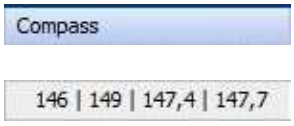
Lipo voltage in [V]

Lipo Current in [A]



Capacity in [mAh]

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

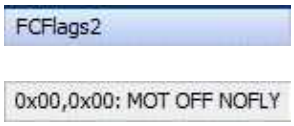


First value: Yaw Gyro stabilized Compass signal
Second value: Compass signal (raw)
Third value: Compass setpoint (corrected with declination)
Fourth value: Gyro Compass corrected (declination)

actual Nick-angle in [°]

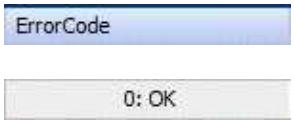
actual Roll-angle in [°]

Actual GPS-status

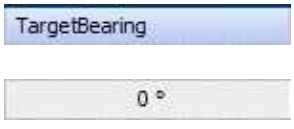


Actual FlightCtrl status

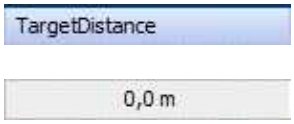
First value: actual gas value
Second value: estimated hoover gas



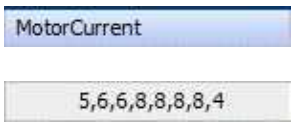
Display of the different ErrorCodes



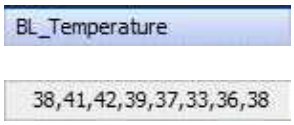
Direction to the Target



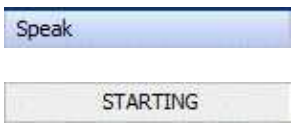
Distance to the Target



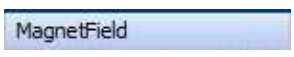
current of the BL-Ctrls 1-12 in [0,1A]

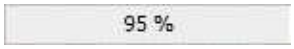


temperature of the BL-Ctrls 1-12 in [1°C]



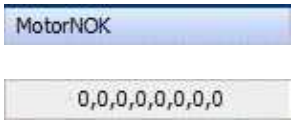
the sentence that the transmitter should speak



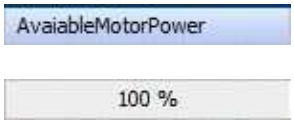


strength on the current magnet field in [%]. This is compared to the field during calibration. Should be at ~100% after calibration.

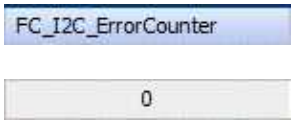
Actual messured inclination of the magnetic (compass) vector ; inclination error compared to the theoretic inclination at your location



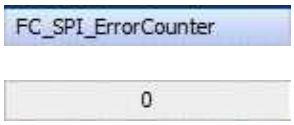
"Motor Not Okay" counter for each motor. counts if a motor is blocked for example.



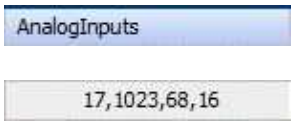
available maximum power of the BL-Ctrls (255 = 100%)



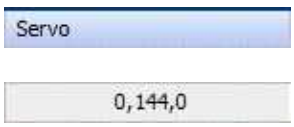
counter of Errors on the I2C bus to the BL-Ctrls



counter of Errors on the SPI bus



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



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 [°]

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

Shutter counter

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

First value: GPS-Update-Rate in 0.1Hz (50 = 5,0Hz)
Second value: GPSData_Flags
Third value: Type of Sat-fix

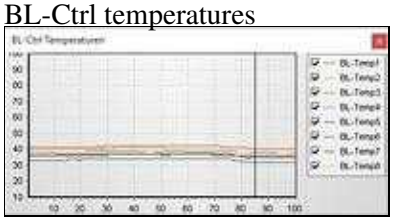
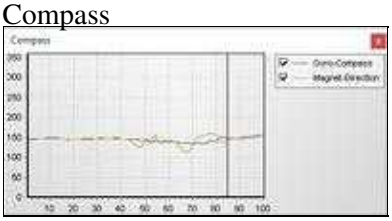
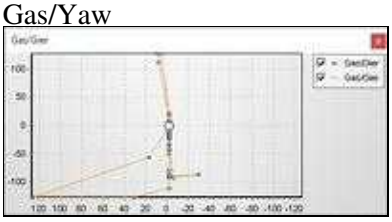
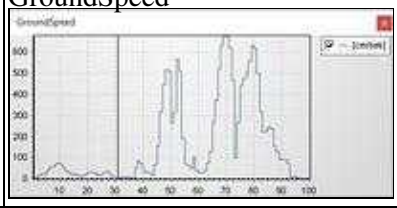
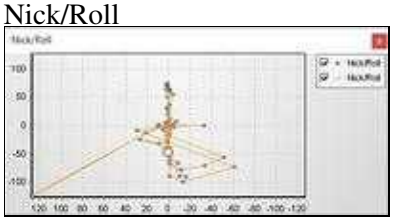
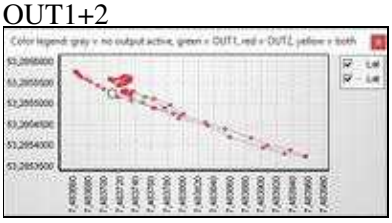
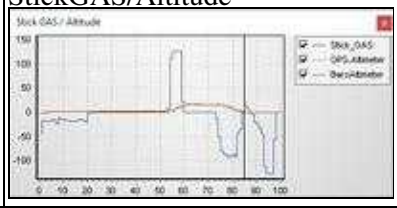
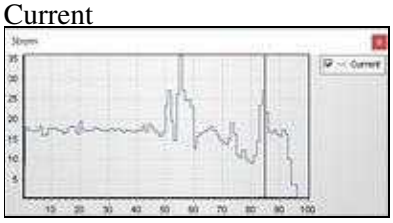
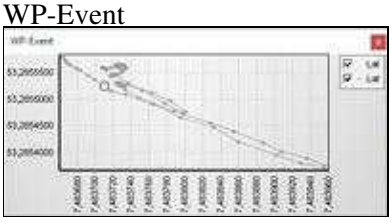
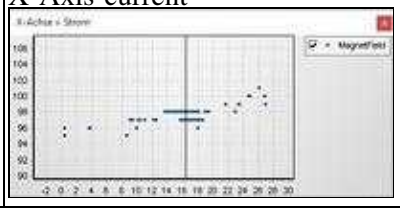
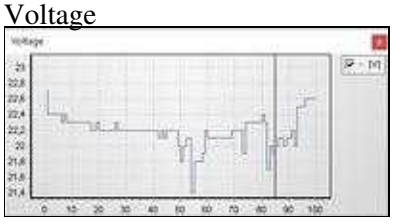
current influence of the GPS-control: Nick ; Roll ; Yaw ;

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:

Altitude .	BL-Ctrl temperatures 	Compass 
Gas/Yaw 	GroundSpeed 	Nick/Roll 
OUT1+2 	StickGAS/Altitude 	Current 
WP-Event 	X-Axis-current 	Voltage 

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-MagentFehler.ini" Here is the magnet field drawn over the current.

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

  ChartType = "Point"

  ChartName = "X-Achse = Strom"

  Series1Ident = "MagnetField"

6.1.2 Example: show the capacity

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

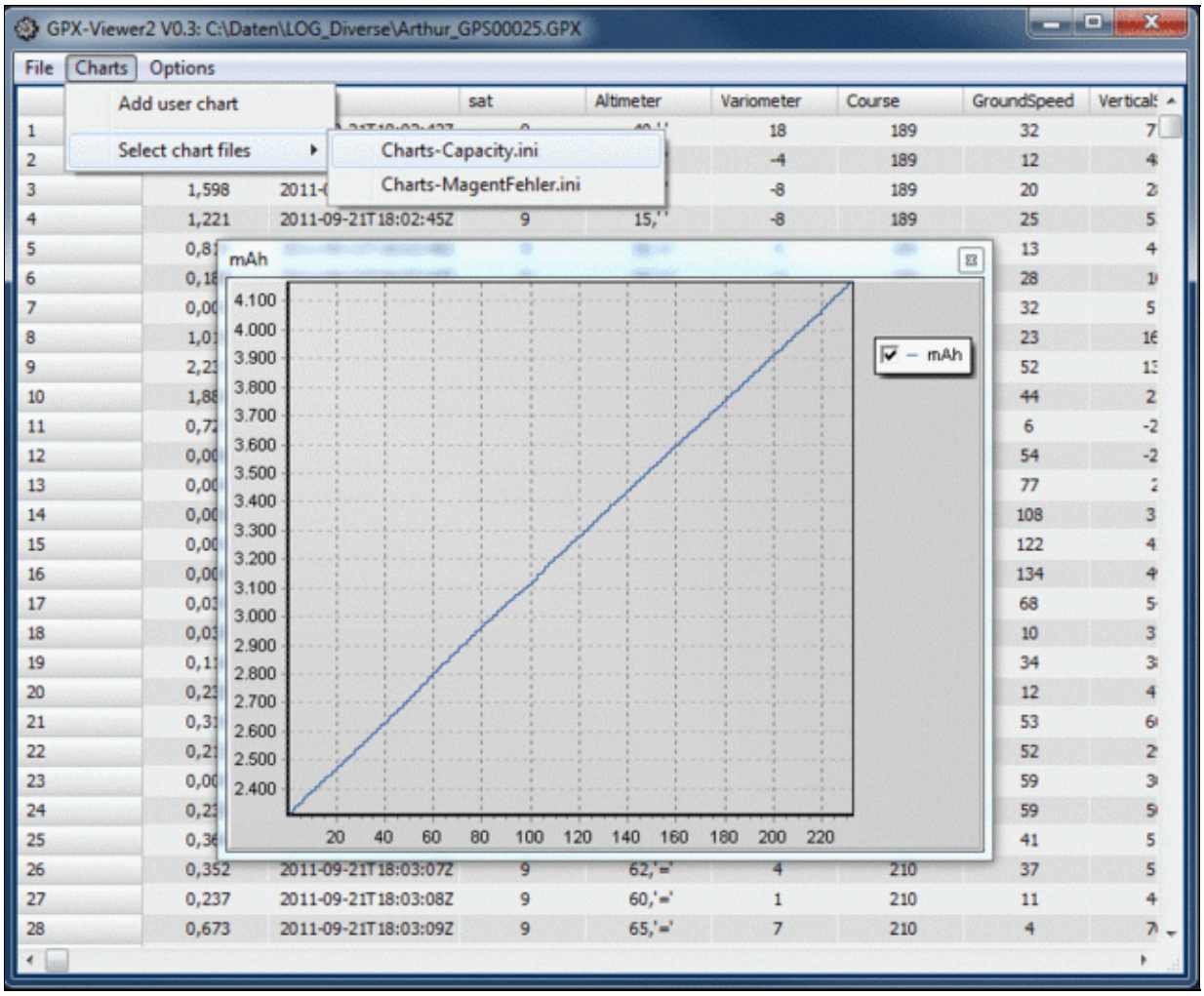
[Chart1]

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 !

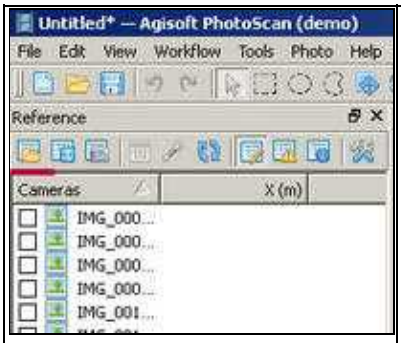
How to:

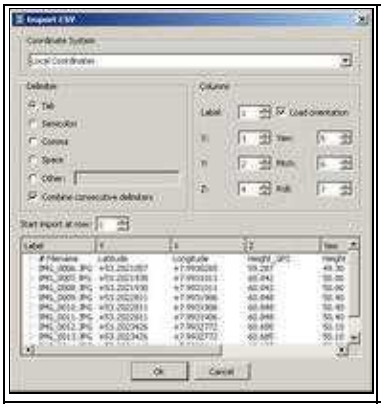
- Click on File ->Create photo logfile...

	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.

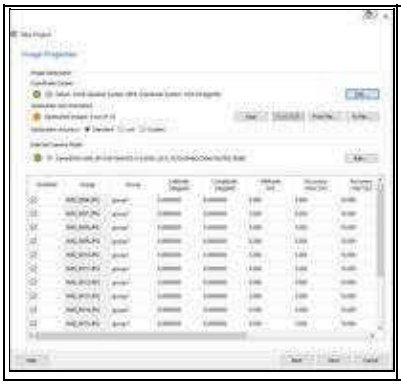
From here on it continues in the appropriate program.

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