## The easy way to GPSSpeedSurfing

## Step1 - Download GPSResults:

Download the latest version of **GPSResults** from <u>www.gps-speed.com/download\_e.html</u> by left mouse-click onto the blue <u>GPSResult V5.37</u>-link on the web-page and install the program (on Windows2000® the free gdiplus.dll may be needed in the same directory to run GPSResults – search the web for it):



**Step 2** depends on what GPS-device you use, the easiest way is to insert a SD-card from a Navi / Amaryllo GT11/GT31® GPS containing saved NMEA txt-files or binary SBN, SBP, or BIN-files or evaluate already saved gpx-files from Garmin®-units.If you use a Garmin® GPS with serial- (Geko®, Foretrex®) or USB-port (Edge®) and want to download the data from the device or want to download the DataLogger data from the GT11/GT31 see below.

# Step 2 - Open GPS-Datafile (NMEA txt-files, binary sbn-, sbp-, or bin-files from Navi / Amaryllo GT11/GT31® SD-cards or saved gpx-files from Garmin®-units):

Take the SD-card from the GT11/GT31 containing NMEA txt-files or binary SBN-/SBP-/BIN-files, insert it into your SD-card reader and drag and drop the file to be evaluated onto the **GPSResults**-icon on your desktop (of course you also copy the files first to your GPS-directory on your harddisk and load them from there. My SD-card shows up as drive **F:** - the GT11/GT31-files are under **F:\GPS\_DATA**, thus double-click **GPS\_DATA** to see the files):

F:\GPS_DATA			
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Adresse C F:\GPS_DATA			🔽 🛃 Wechseln zu
Name 🔺	Größe	Тур	Geändert am
MANFRED FUCHS_001154_20070730_195457.5BN	716 KB	SBN-Datei	30.07.2007 19:54
E 20070111_180205.TXT	430 KB	Textdokument	12.01.2007 11:29

Select (left-click) and drag and drop the file you want to analyse over the **GPSResults**-icon on your desktop:



Alternatively you can start **GPSResults** (double-click the icon) and open the GPS-file to be analysed from the **File - Open...** menu (or **Ctrl & O**) and the following file selector box (select file and click **Open**):

	Suchen in: 📴 GPS_DATA 💌 🗢 🖻 📸
	Zulet:         20070111_180205.TXT           WMANFRED FUCHS_001154_20070730_195457.SBN           Desktop
GPSResults V5.36 - 21.02.2008 - www.gps-speed.com File View Help	Eigene Dateien
Open Ctrl+O	
Recent File	Arbeitsplatz
Download Trackpoints from GPS Ctrl+T	Netzwerkungeb Dateiname: MANFRED FUCHS 001154 20070730 19545 V Olfnen
Exit	ung Dateityp: all GPS-Files ("gpx,".tst,".nmea,".sbn,".bin)

The program will open and read the file and come up with the **Max.** speed **Results** selected, so spikes can easily be identified and deleted in the trackpoints-list (third list on the left, if necessary see below **FAQ – Delete Spikes**, usually with GT11/GT31®- or Garmin® Edgedata there are no spikes):

G	PSResults	V5.36	- 21.0	02.200	8 - ww	w.gps-s	peed	.com	- [N	ANFRED FUCHS_001154_20070730_195457 🗐 🗖 🔀
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	j GPS-Fill ☑ (Ē) MAI	es NFRED F 2007.07	UCHS_( 30 17:55	001154_; 5:29 - 19:	2007073 52:51	0_19545;	7.SBN 7073	points		
#	time		[s]	[m]	[knots]	[m/s <sup>2</sup> ]	Sats	HDoF		
273 273 273 273 273	19:40 2 19:40 3 19:40 4 19:40	:29.520 :30.520 :31.520 :32.520	1.0 1.0 1.0 1.0	19.0 19.4 19.5 19.9	36.894 37.749 37.944 38.780	0.4 0.4 0.1 0.4	10 10 10 10	0.8 0.8 0.8 0.8	-	
273 273 273 273	5 19:40 6 19:40 7 19:40 8 19:40	33.519 34.519 35.519 36.519	0.999 1.0 1.0 1.0	20,0 19.7 19.3 19.0	38,974 38,371 37,458 36,972	0,1 -0.3 -0.5 -0.3	10 10 10 10	0.8 0.8 0.8 0.8	*	38.974
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2 3 4 5	19:59:52 19:51:49 19:30:42 19:34:18	19.6 19.0 18.9 18.6	38.02 36.85 36.75 36.23	2 37.6 5 36.4 8 36.3 3 35.8	22 11 55 11 58 8 33 9	0.8 0.8 1.6 1.0	0 0 0 0	.1 .1 .1	~	30
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Ready										

You may check your results in lower list on the left by selecting different categories (e.g. **250m**, **500m**, **10sec** - 5x10sec in the **Average 5**-field) or in the zoomed speed over time display in the lower right corner (use mouse-wheel or +/- keys to zoom, drag to shift time-range, left-click the result you are interested in in the Results-list) before sending them to GPSSpeedSurfing (GP3S). Make also sure that from GPX-files only data from one day are selected (left-click or Ctrl & left-click) in the track-segments list (first list from the top). Select Doppler-speed evaluations if needed and continue with **Step 3 - Send Results to GP3S**.

## Step2 – Download GPS-data from Garmin® units (Geko®, Foretrex®, Edge®):

Start **GPSResults** by double-clicking the program-icon on the desktop, from the **File** – menu select **Download Trackpoints from GPS...**, then select the **COM-port** where you connected your Gamin® GPS (Geko® or ForeTrex®) (if you don't know the COM-port number see **FAQ - COM-Port** below) or **USB** for the Garmin® Edge (in this case Garmin Training Center® and the USB drivers have to be installed and the data have to be downloaded already once with the Training Center, otherwise the last track-segment may be missing):

File	Edit	View	Window	Extras	Help		
	pen lose				Ctrl+O		
1	GPXTe	st.gpx				Select COM/USB-Port	X
D D L(	ownloa ownloa oad Wa	ad Trac ad Way aypoint	kpoints fro points fron s	m GPS n GPS	Ctrl+T Ctrl+W	COM2     VCP0     C GT11/31     G G       9600,N,8,1     Read Trackpoints     Car	armin ncel
G	oogleE oad Ba	arth(Ti ckgrou	4) Overlay nd-Image.		Ctrl+I		

Finally select **Garmin** and click **Read Trackpoints** and the download will start. With the slow serial port of the older Garmin® units the download of 10.000 trackpoints will take 500 sec since the serial port speed is limited to about 20 trackpoints/sec, the faster USB-port of the Edge allows a speed of 600 trackpoints/sec. If you get error messages see **FAQ - Download Problems** below.

After the download has finished, you will see a file-selector box asking for a filename, so the downloaded data can be saved as a e.g. GPX-file (give the file a speaking name containing the date, for the Edge the serial-number of the unit is the default filename):



#### Step2 – Download GPS-data from Navi® GT11/GT31 units (binary format):

The GT11/GT31 (firmware version v1.61-0815 or later) has to be switched on and set to the NAVILINK-mode before the download can start. The settings for the DATALOGGER should be:

#### INTERVAL **1SEC** MIN SPEED **OFF (important for Alpha-categories if your speed drops too low)** DATA ITEM **SBP**

If you used TRK for the DATA ITEM no usable data (for our purposes) will be saved. You should CLEAR the DATA LOGGER memory before a session because otherwise old stuff from older firmware versions may still be in memory or several sessions may be mixed up and this makes it more difficult to do a meaningful evaluation later on.

Start **GPSResults** by double-clicking the program-icon on the desktop, from the **File** – menu select **Download Trackpoints from GPS...**, then select the **COM-port** where your Navi GT11/GT31 appears (if you don't know the COM-port number see **FAQ - COM-Port** below). The Navi has an integrated USB-serial adaptor, the USB drivers have to be installed and the **navilink\_cmd.exe**-program (or the successor **nvk.exe**) has to downloaded from **www.locosystech.com/download/handheld/NAVILINK CMD v153.rar** 

and put into the same directory where **GPSResults** is (in the latest version **nvk.exe** is already put there during installation of GPSResults, so the additional download is not necessary).

File Edit View Window Extras	Help	Select COM/USB-Port
Open Close	Ctrl+O	COM3 Serial2  GT11/31  Garmin
1 GPXTest.gpx		NaviLink Read Trackpoints Cancel
Download Trackpoints from GPS Download Waypoints from GPS	Ctrl+T Ctrl+W	

Finally set the GT11/GT31 to the NAVILINK-mode, select the Navi-button, and click Read Trackpoints and the download will start. If you get error messages see FAQ - Download Problems below.

A file-selector box appears asking for a filename, so the data can be saved as **BIN**-file (give the file a speaking name containing the date etc.):

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2073	7 08:20:	25.571	1.0	19.4	37.67	2 0.4	H 8		1.0		INT A
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2	08:28:06	19.8	38.41	0 38.	240 8		1.0	0.3	3		
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5	08:43:28	19.1	37.18	6 36.	786 7	7	1.4	0.	1	~	······
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12.10.2	2007 06:59:	23 5.8	32km/h (	3.149кг	nots 3.1	15Dopple	er 1.2	HDoP	9Sat	s	

The data will then be analysed and displayed as in the 'Load from File'-case. **GPSResults** comes up with the **Max.** speed **Results** selected, so spikes can easily be identified and deleted in the trackpoints-list (third list on the left, if necessary see below **FAQ – Delete Spikes**, none in this example):

You may check your results in lower list on the left by selecting different categories (e.g. **250m**, **500m**, **10sec** - 5x10sec in the **Average 5**-field) or in the zoomed speed over time display in the lower right corner (use mouse-wheel or +/- keys to zoom, drag to shift time-range, left-click the result you are interested in in the Results-list) before sending them to GPSSpeedSurfing. Make also sure that from GPX-files only data from one day are selected (left-click or Ctrl & left-click) in the track-segments list (second list from the top). Select Doppler-speed evaluations if needed and continue with **Step 3 - Send Results to GP3S**.

## Step 3 – Send Results to GPSSpeedSurfing

Select **File – Send Results to GPSSpeedSurfing** to upload your session results to GP3S. Of course you have to be connected to the internet in order to do that.

File	Edit	View	Window	Extras	Help
O C	pen lose				Ctrl+O
1	GPXTe	est.gpx			
D D La	ownloa ownloa oad Wa	ad Tracl ad Way aypoint	kpoints fro points fror s	m GPS n GPS	Ctrl+T Ctrl+W
Gi La	oogleE bad Ba	arth(TN ckgrour	4) Overlay nd-Image.	·	Ctrl+I
Sa Sa	ave Tr ave Re	ackpoin sults	ts		Ctrl+S Ctrl+R
Se Se Se	et Usei end Re end Re	rname a esults to esults to	and Passw ) GPSSpee ) GPSKiteS	ord dSurfing urfing	Ctrl+U
E	xit				

If you upload the first time you will be asked for your GP3S **Username** and **Password** (you can also enter or re-enter it at any time by clicking **File** – **Set Username and Password**). Your username and password will be saved, so next time you don't have to specify it again.

Username and Password for GPSSpe	edSurfing	×
Username:		
User Name		
Password:	ок	
******		

If you send results from GPS-data containing Doppler-speeds these more accurate speeds will be transmitted automatically - independent of the setting of 'Doppler'-mode selection!

The results to be sent are listed in a resizable dialog window for review and can be sent to the corresponding server by clicking the '**Send**'-button (internet connection required!).

R	esults Preview 🔀
	-> http://www.gps-speedsurfing.com/gpsresults.asp
	positional speed, no interpolation min. speed.: 8knots, max. accel.: 3.0m/s^2
	total length: 11.0km, duration 17min
	best 10s runs: 1: 42.722knots 79.121km/h [219.8m 10.000s] 2: 41.723knots 77.270km/h [214.6m 10.000s] 3: 40.874knots 75.698km/h [210.3m 10.000s] 4: 40.205knots 74.459km/h [206.8m 10.000s] 5: 40.022knots 74.120km/h [205.9m 10.000s]
	average: 41.109knots 76.134km/h
	best other runs: max. speed: 43.475knots 80.515km/h 100m: 43.165 knots 79.941km/h [111.0m 5.000s] 250m: 42.747 knots 79.167km/h [263.9m 12.000s] 500m: 41.621 knots 77.082km/h [513.9m 24.000s] 2s: 43.311 knots 80.212km/h [44.6m 2.000s] 20s: 41.957 knots 77.704km/h [431.7m 20.000s] 60s: 35.424 knots 65.606km/h [1093.4m 60.000s] alpha 250m: 16.075 knots 29.772km/h [82.7m 10.0s] alpha 500m: 16.075 knots 29.772km/h [82.7m 10.0s] alpha 1000m: 16.075 knots 29.772km/h [82.7m 10.0s]
	Cancel Send

A successful transmission is indicated by the following messages:

GPSRes	ults 🛛 🔀
	You just logged in! 2/22/2008 3:16:27 PM: starting log @ gpsresults.asp 2/22/2008 3:16:27 PM: Start loading data 2/22/2008 3:16:27 PM: XML document OK 2/22/2008 3:16:27 PM: Authenticating user 2/22/2008 3:16:27 PM: Reading date OK 2/22/2008 3:16:27 PM: Reading date OK
	2/22/2008 3:16:27 PM: Max 2 sec read 2/22/2008 3:16:27 PM: Max 10 sec read 2/22/2008 3:16:27 PM: Average read 2/22/2008 3:16:27 PM: 100 m read 2/22/2008 3:16:27 PM: 250 m read 2/22/2008 3:16:27 PM: 500 m read 2/22/2008 3:16:27 PM: Nautical mile not found!
	2/22/2008 3:16:27 PM: 3500 s not round! 2/22/2008 3:16:27 PM: - Distance read 2/22/2008 3:16:27 PM: Adding session speeds to database! 2/22/2008 3:16:27 PM: Session speeds added SUCCESSFULLY to gps-speedsurfing.com!! 2/22/2008 3:16:27 PM: closing log @ gpsresults.asp
	OK

After upload of the results the log-in page of the corresponding server is invoked, log-in and add the missing fields and comments before posting the results. Enter **Full name** and **Password**, click **Log in**:

🔊 🕤 👻 http://ww	w.gps-speedsurfing.com/gps	s.asp?mnu=admin			<b>v</b>
tei Bearbeiten Ansicht <mark>pogle G</mark> -	Favoriten Extras ?	50 🚸 🍻 🚰 👻	🔊 16 blocked 🥖		
🔗 🌈 GPS-Speedsu	fing.com				
		-			
CPS-	SDEENSUR		FOR WINDSURFERS BY	WINDSURFERS	
GPS-	SPEEDSUR	FING	FOR WINDSURFERS BY	WINDSURFERS	
GPS- News Rankings Profile Sessions Boar	SPEEDSUR Sessions	Info & Rules	FOR WINDSURFERS BY	Forum	Events
GPS- News Rankings Profile Sessions Boar Home Register Passw	SPEEDSUR Sessions ds Sails Fins Spots rord mailer Settings	FING Info & Rules Events	FOR WINDSURFERS BY	Forum	Events
GPS- News Rankings Profile Sessions Boar Home Register Passw Administrating	SPEEDSUR Sessions ds Sails Fins Spots ford mailer Settings	FING Info & Rules Events	FOR WINDSURFERS BY	Forum	Events
GPS- News Rankings Profile Sessions Boar Home Register Passw Administrating Log in	SPEEDSUR Sessions ds Sails Fins Spots rord mailer Settings	FING Info & Rules Events	FOR WINDSURFERS BY	Forum	Events
GPS- News Rankings Profile Sessions Boar Home Register Passw Administrating Log in Full name	SPEEDSUR S Sessions ds Sails Fins Spots rord mailer Settings	FING Info & Rules Events	FOR WINDSURFERS BY	Forum	Events

Select Sessions below Profile:

🜈 GPS-Speedsurfing.com - Windows Internet Explorer						
Ittp://www.gps-speedsurfing.com/gps.asp?mnu=admin&smnu=						
Datei     Bearbeiten     Ansicht     Favoriten     Extras     ?       Google     G < ∅     I to blocked     I to blocked						
🔆 🏟 🍘 GPS-5peedsurfing.com	6					
GPS-SPEEDSURFING FOR WINDSURFERS BY WINDSURFERS						
News         Rankings         Sessions         Info & Rules         My GPS         Forum           Profile         Sessions         Boards         Sails         Fins         Spots         Events           Home         Settings         Log out         Settings         Log out         Settings         Log out	Events					
Administrating						
You just logged in!						

Now click Use this data to add a session (or Delete, if you want to delete it):

	HEBOOT	ur ing			
News Rankings	Sessions	Info & Rules	My GPS	Forum	Events
Profile Sessions Boards	Sails Fins Spots	Events			
Home Add session Setting	gs Log out				
Administrating					
List of all session da	ta added by GPS	S Action Replay			
List of all session da	ta added by GPS	5 Action Replay			
List of all session da Date Average speed	ta added by GPS : Friday, October : 37.10 knots (38.	5 Action Replay 12, 2007 1 37.3 37.2 36.8 36.1	)		
List of all session da Date Average speed Max. 2 sec. (software)	ta added by GPS : Friday, October : 37.10 knots (38. : 38.8 knots	<b>5 Action Replay</b> 12, 2007 1 37.3 37.2 36.8 36.1	)		
List of all session da Date Average speed Max. 2 sec. (software) 100 m run	ta added by GPS : Friday, October : 37.10 knots (38. : 38.8 knots : 38.5 knots	<b>5 Action Replay</b> 12, 2007 1 37.3 37.2 36.8 36.1	)		
List of all session da Date Average speed Max. 2 sec. (software) 100 m run 250 m run	ta added by GPS : Friday, October : 37.10 knots (38. : 38.8 knots : 38.5 knots : 37.5 knots	<b>5 Action Replay</b> 12, 2007 1 37.3 37.2 36.8 36.1	)		
List of all session da Date Average speed Max. 2 sec. (software) 100 m run 250 m run 500 m run	ta added by GPS : Friday, October : 37.10 knots (38. : 38.8 knots : 38.5 knots : 37.5 knots : 34.5 knots : 34.5 knots	<b>5 Action Replay</b> 12, 2007 1 37.3 37.2 36.8 36.1	)		
List of all session da Date Average speed Max. 2 sec. (software) 100 m run 250 m run 500 m run 1 hour	ta added by GPS : Friday, October : 37.10 knots (38. : 38.8 knots : 38.5 knots : 37.5 knots : 34.5 knots : 34.5 knots : 9.5 knots	5 Action Replay 12, 2007 1 37.3 37.2 36.8 36.1	)		

Add the required additional information (Max. GPS (display), Windspeed, Windgusts, and **Remarks** before you click Add below the Remarks-field. After clicking Add your session will appear in the posted sessions list:

lews Rankings	Se	essions	Info & Rules	My GPS	Forum	Events
Profile Sessions Board	s Sails	Fins Spots	Events			
Administrating	cings co	,				
Add session						
Event	- 🗸					
Date	12 🗸	10 🖌 20	07 🖌			
Spot	Germ	any, Buesu	ım / Westerkoog 🔽			
Board	F2 M	issile	~			
Sail	Gun	Sails Mega	XS 5.7 💌			
Fin	Time	Machine TM	M45v7 Carbon 22 💌			
GPS type	Ama	yllo Trip Tra	acker 💌			
Max. GPS (display)		knots				
Max. 2 sec. (softwar	e) 38.8	knots				
10 sec speed run 1	38.1	knots				
10 sec speed run 2	37.3	knots				
10 sec speed run 3	37.2	knots				
10 sec speed run 4	36.8	knots				
10 sec speed run 5	36.1	knots				
100 m run	38.5	knots				
250 m run	37.5	knots				
500 m run	34.5	knots				
Nautical mile	0	knots				
1 hour	9.5	knots				
Distance	16.6	km				
	-					

## FAQ – COM-Port

With the serial port Garmin® GPS units the **COM-Port** (serial port of your computer, or the address of the **USB-serial port adapter** in case your computer does not have a serial port anymore, in this case install the USB-serial adapter software driver before you do the following steps) has to be set before downloading the data from the unit (Step 2):

Right-click the **My Computer** icon on your desktop or in the **Start**-window and select (leftclick) **Manage**, **Device Manager**, click the plus-sign to see the **Ports (COM & LPT)** settings (my USB-serial adapter appears under COM3 in this example):





Select this COM-Port in the **Download Trackpoints from GPS**-window before pressing **Read Trackpoints** (GPSResults will save the setting, so next time it will come up with COM3 already selected. Use the same USB-port for your USB-serial adapter next time, otherwise the COM-port address may change):

Select COM/USB-Port						
COM2 VCP0	▼ C GT11/31 • Garmin					
9600,N,8,1	Read Trackpoints Cancel					

## FAQ – Download Problems

If the download does not start and you see one or all of the following message boxes, your GPS was not switch on or (most commonly) the little connector was not pushed hard enough into the hole of the Garmin Foretrex 201 clip or 101 unit or the contacts on your Geko are already too much corroded):

GPSResu	lts 🗶	GPSResu	lts 🔀	GPSR	esults 🔀
₹	command not acknowledged	⚠	Cannot Send Command_Data		Track-Start could not be found!
	OK		OK		ОК

Try to improve the connection and then repeat download.

The Navi has an integrated USB-serial adaptor, the USB drivers have to be installed and the **navilink\_cmd.exe**-program (or it's successor **nvk.exe**) has to downloaded from **www.locosystech.com/download/handheld/NAVILINK\_CMD\_v153.rar** and put into the same directory where **GPSResults** is (in the latest version **nvk.exe** is already put there during installation of GPSResults, so the additional download is not necessary).

If **navilink\_cmd.exe** is not the same directory as GPSResults (an Alertbox will appear and ask you to copy it there.



The GT11/GT31 (firmware version v1.61-0815 or later) has to be switched ON and set to the NAVILINK-mode before the download can start. The settings for the DATALOGGER should be:

INTERVAL 1SEC, MIN SPEED OFF, DATA ITEM SBP

If you used TRK for the DATA ITEM no usable data (for our purposes) will be saved. You should CLEAR the DATA LOGGER memory before a session because otherwise old stuff from older firmware versions may still be in memory or several session may be mixed up and this makes it difficult to do a meaningful evaluation later on.

## FAQ – Delete Spikes

GPS units may produce so-called **spikes** when they loose satellite signals or when they are carried below the wetsuit (weakens the satellite signals). These spikes have to be deleted before the session results can be sent to GP3S since they give misleading wrong **Max.** speed values etc. When you download the data from your GPS or after reading the data from a file **GPSResults** comes up in the **Max.** speed selected in the **Results**–section:



In this example the GPS-file contains two sessions with spikes and a strange date for the start of the second tracksegment (2090.01.24). First one can deselect the second session by clicking the corresponding checkbox and get rid of the spikes at the begin of this session (high speeds > 200knots in the first trackpoints).

Select the first trackpoint in the trackpointlist, then use the scrollbar and scroll down until you see meaningful values, then **Shift** & Left Click the last invalid point (# 12 in this case) to select the whole range of invalid points, the background color will get blue indicating the selected trackpoint range, then press the **Delete Trackpoints(s)**-button:

							elimits	
GPS-Files           □         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■         ■								
#	time	[s]	[m]	[kı	nots]	[m/s²]	Alt[m]	^
	10:13:18.000	2.0	285.1	27	7.060	-0.0	-38.3	
	10:13:20.000	2.0	282.8	27	4.903	-0.6	-38.3	
	10:13:22.000	2.0	281.5	27	3.595	-0.3	-38.3	
10	10:13:24.000	2.0	555.6	53	9.957	68.5	-39.3	
11	10:13:26.000	2.0	555.6	53	9.957	0.0	-39.8	
12	10:13:28.000	2.0	62.4	60	.601	-123.3	-39.8	
13	10:13:30.000	2.0	0.0	0.	000	-15.6	-39.8	
14	10:13:32.000	2.0	3.7	3.	580	0.9	-39.8	
15	10:13:34.000	2.0	0.0	0.	000	-0.9	-39.8	×
38min, 155.099km Delete Trackpoint(s)								

The display in the upper right is automatically zoomed to the remaining trackspoints (can be zoomed by pressing + or - or using the mouse-wheel with the mouse over the window):



Selecting the second tracksegment repeats the evaluation with all trackpoints including those with the invalid timestamp, leading to a useless speed-over-time-window x-scale:

GPS	🐺 GPSResults V5.36 - 21.02.2008 - www.gps-speed.com - [818_070707.gpx]							
File	File Edit View Window Extras Help _ 🗗							_ 8 ×
Timezo	Timezone [GMT +/- h]: 1 🔆 Timelimits [hhmm]: no timelimits							ΝΔε
Image: Spin Files         Image: Spin Files           Image: Spin Files         Image: Spin Files </td <td></td>								
#	time	[5]	[m]	[knots]	[m/s <sup>2</sup> ]	Alt[m]	~	
1667	11:09:02.000	2.0	38.0	36.916	0.6	-7.5		
1668	11:09:04.000	2.0	38.5	37.390	0.1	-8.0	1000	
1669	11:09:06.000	2.0	38.5	37,390	0.0	-8.0		
1670	11:09:08.000	2.0	38.0	36.916	-0.1	-8.0		
1671	11:09:10.000	2.0	38.5	37.390	0.1	-8.0		0.000
1672	11:09:12.000	2.0	37.5	36,486	-0.2	-8.0		100.000
1673	11:09:14.000	2.0	40.7	39.561	0.8	-8.0		
1674	11:09:16:000	2.0	41.8	40.580	0.3	-7.5		
11675	11:09:18:000	2.0	- 39.5	38.390	1-0.6	-8.0		
- Limits ↓ 0 - Resul ∩ 6a ∩ @	Denser Hackportes           Limits         ✓ On         8 ÷ knots         3.0 ÷ m/s*         5 ÷ HDoP         5 ÷ Sats           Results         C Gates         Max.         2 sec         10 sec         20 sec         1 min         1 hour           C @250         @500         @1km         100m         2 50m         500m         1852m							
1 Do	ppler I Project.	J♥ Int	erpol. I	Altitude I	Lonst	rain 🔽 🕖	Ine/Leg	
#	time [m]	[kno	ts] mA	ACC			-	
1	11:09:16 41.8	40.5	80 0.3	3				40
2	12:45:02 41.2	40.0	73 0.7					
4	11:45:32 40.8	39.7	02 0.3					20
5	10:52:04 40.7	39.5	61 1.2	2			~	20
20	-	- a 17	0.4771	-	E	40.052		
1 20 -	Tows Averag	je 2:  4	0.477Kh	ious A	verage 5:	140.053	oknu(s	20
−Displa	y acks ∏ Vicinity	IT Poi	nts 🗂 🛙	Doppler 🗖	Acc 🗆	HDoP	Sats	
Playb Speed	ack ± 0.10s 🛨 🔜	: SI	op :	> Un	its km/h 🤇	mph (•	knots	10
Determin	termineMaxSpeed - evaluate: 168.724 msec (0.172 sec CPU)							

One can drag the speed-over-time display to the right to better see the valid points, then **Shift & Click** left and right of the colored 'burst' to constrain the time range (dotted lines appear where you clicked):

40		
30	, — — — — — —	
20	, — — — — — — —	
10		

Then press + or use the **mouse wheel** to zoom in:



This example data set contained only a few bad trackpoints at the begin. In cases with more spikes the steps have to be repeated until all bad trackpoints are deleted: click first entry in the **Max.** speed results-list, select outlier in the trackpoint-list, click **Delete Trackpoint(s)**.

One can also select a whole range of bad trackpoints in the trackpoint-list by clicking **Ctrl & left mouse** repeatedly or selecting the first point, scrolling through the list and **Shift & left-click** the last trackpoint (as done above), followed by **Delete Treackpoint(s)**.

The cleaned data can be saved (in different formats) under **File – Save Trackpoints...**, so the cleaning has to done only once (but it is not a good idea to overwrite the original data, instead give the cleaned data e.g. a 'C' before the extension: e.g. MySession\_080807.gpx -> MySession\_080807C.gpx).