

THE MEASURABLE DIFFERENCE.



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# OXYGEN TRAINING > GPS DATA ACQUISITION



# TRION MODULES FOR GPS-DAQ



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- ① TRION-TIMING
  - > Max. 10 Hz refresh rate
- ② TRION-VGPS-20
  - > Max. 20 Hz refresh rate
- TRION-VGPS-100
  - > Max. 100 Hz refresh rate
- ③ Data acquired by the GPS receiver
  - > Latitude
  - > Longitude
  - > Altitude
  - > Velocity
  - > Heading
  - > Satellites
  - > Fix Quality
  - > H. Dilution
  - > SoD; Seconds of Day
  - > Date
  - > Acceleration (Calculated from Velocity)
  - > Distance (Calculated from Velocity)

GPS 1/1 Sim	TRION-VGPS-100-V3	nan	NMEA	100 Hz
GPS 1/1				
Latitude_GPS 1/1 Sim	Latitude	NaN	Latitude	100 Hz
Longitude_GPS 1/1 Sim	Longitude	NaN	Longitude	100 Hz
Altitude_GPS 1/1 Sim	Altitude	NaN	Altitude	100 Hz
Velocity_GPS 1/1 Sim	Velocity	NaN	Velocity	100 Hz
Heading_GPS 1/1 Sim	Direction	NaN	Direction	100 Hz
Satellites_GPS 1/1 Sim	Satellites	NaN	Satellites	100 Hz
Fix Quality_GPS 1/1 Sim	Quality	nan	Quality	100 Hz
H. Dilution_GPS 1/1 Sim	HDOP	NaN	HDOP	100 Hz
SoD_GPS 1/1 Sim	Second	NaN	Second	100 Hz
Date_GPS 1/1 Sim	Date	nan	Date	100 Hz
Acceleration_GPS 1/1 Sim	Acceleration	NaN	Acceleration	100 Hz
Distance_GPS 1/1 Sim	Distance	NaN	Distance	100 Hz

Default Channel Name	Data	Channel description	Range	Unit
GPS	NMEA	GPS NMEA channel	-	-
Latitude_GPS	Latitude	Current latitude of the object	-90° ... 90°	°
Longitude_GPS	Longitude	Current longitude of the object	-180° ... 180°	°
Altitude_GPS	Altitude	Current altitude of the object	-100m ... 1000 m	m
Velocity_GPS	Velocity	Current velocity of the object	0 km/h ... 300 km/h	km/h
Heading_GPS	Direction	Current heading of the object	0° ... 360°	°
Satellites_GPS	Satellites	Number of satellites in view	0 ... 24	-
Fix Quality_GPS	Quality	GPS Fix Quality	-	-
H. Dilution_GPS	HDOP	2D deviation of longitude and latitude	0m ... 100 m	m
SoD_GPS	Second	Current second of the day	0s ... 86400 s	m
Date_GPS	Date	Current date in the format yyy-mm-dd hh:mm:ss:ms	-	-
Acceleration_GPS	Acceleration	Current acceleration of the object	-1000 m/s <sup>2</sup> ... 1000 m/s <sup>2</sup>	m/s <sup>2</sup>
Distance_GPS	Distance	Distance covered from start of measurement	0m ... 1000000 m	m





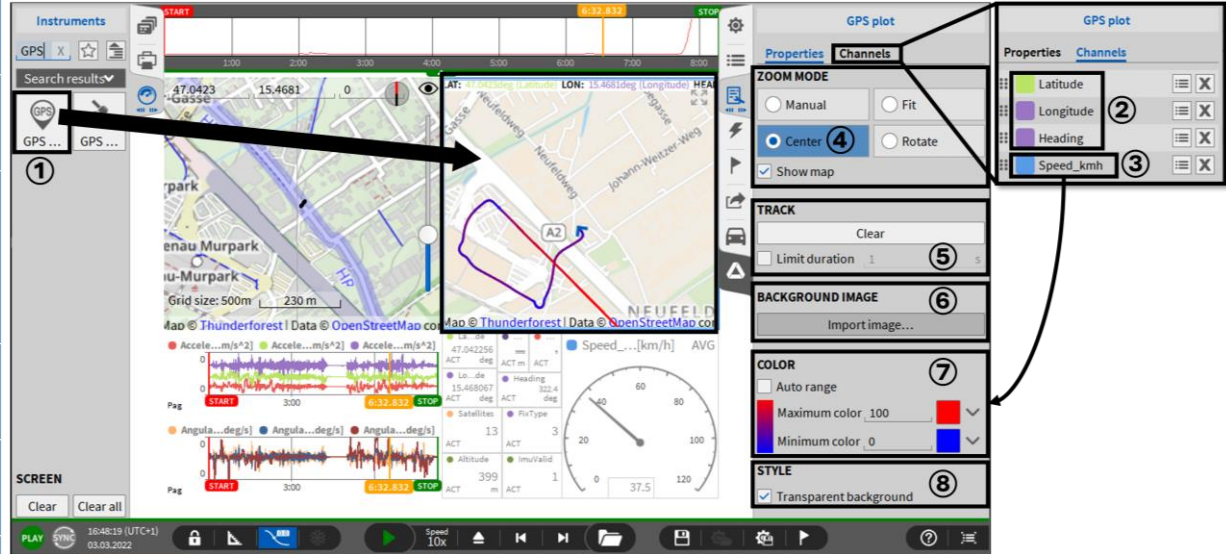
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# GPS PLOT INSTRUMENT

For visualizing the current position and the travelled track, the GPS plot can be used

- ① The GPS plot can be dragged and dropped from the Instruments menu
- ② Latitude, Longitude and Heading can be assigned to the GPS plot instrument. In case a internet connection is active, an Open Street Map is loaded
- ③ An additional channel can be added to colorcode the GPS-trail
- ④ The zoom mode determines how the map is centered in the instrument
- ⑤ By default the whole gps trail is shown, with a limit duration the trail fades after x seconds
- ⑥ If no internet is available a image can be loaded
- ⑦ Select the max/min color and value
- ⑧ Toggle background obacity





# GPS PLOT INSTRUMENT

- ④ A background image (Satellite image) can be imported in the instrument properties
- ⑤ After selecting the image, a popup will appear  
The known coordinates for 2 points on this image have to be entered and a cursor needs to be placed on the reference point on this picture
- ⑥ That's required for positioning the picture absolutely on the map
- ⑥ The picture will be overlaid to the map afterwards

**GPS plot**

Properties Channels

**ZOOM MODE**

Manual  Fit

Center  Rotate

Show map

**TRACK**

Clear

Limit duration 1 5

**BACKGROUND IMAGE**

Import image... ④

**STYLE**

Transparent background

**Positioning**

**MAP POINT 1**

Latitude 47.020532

Longitude 15.496724

X 364 px

Y 117 px

**MAP POINT 2**

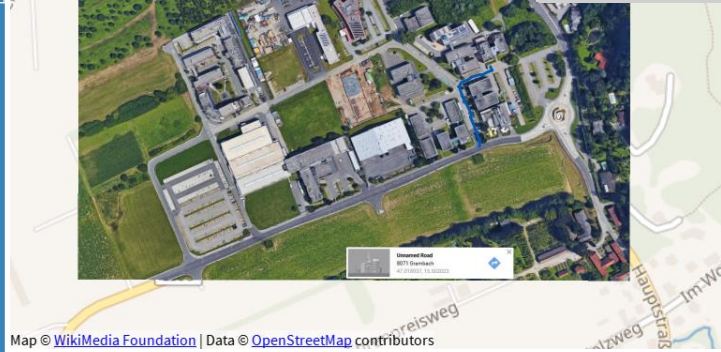
Latitude 47.017844

Longitude 15.502278

X 1141 px

Y 666 px

Cancel Apply



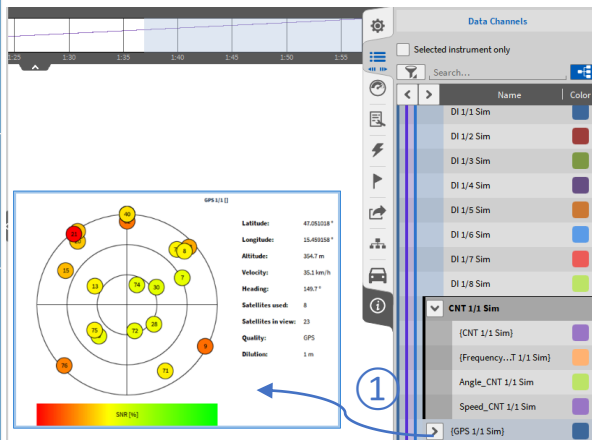




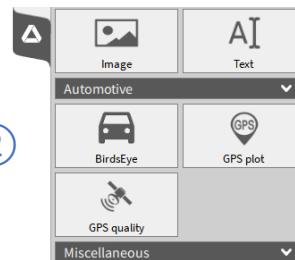
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# GPS QUALITY INSTRUMENT

Displays the Position of the satellites in view and gives an overview of the current GPS data



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1 Can be added to the measurement screen by dragging and dropping the GPS NMEA string to the screen...

2 ... or by selecting the *GPS quality* instrument form the Instrument and assigning the GPS NMEA string afterwards

3 Explanation of the *satellites* plot

