

THE MEASURABLE DIFFERENCE.

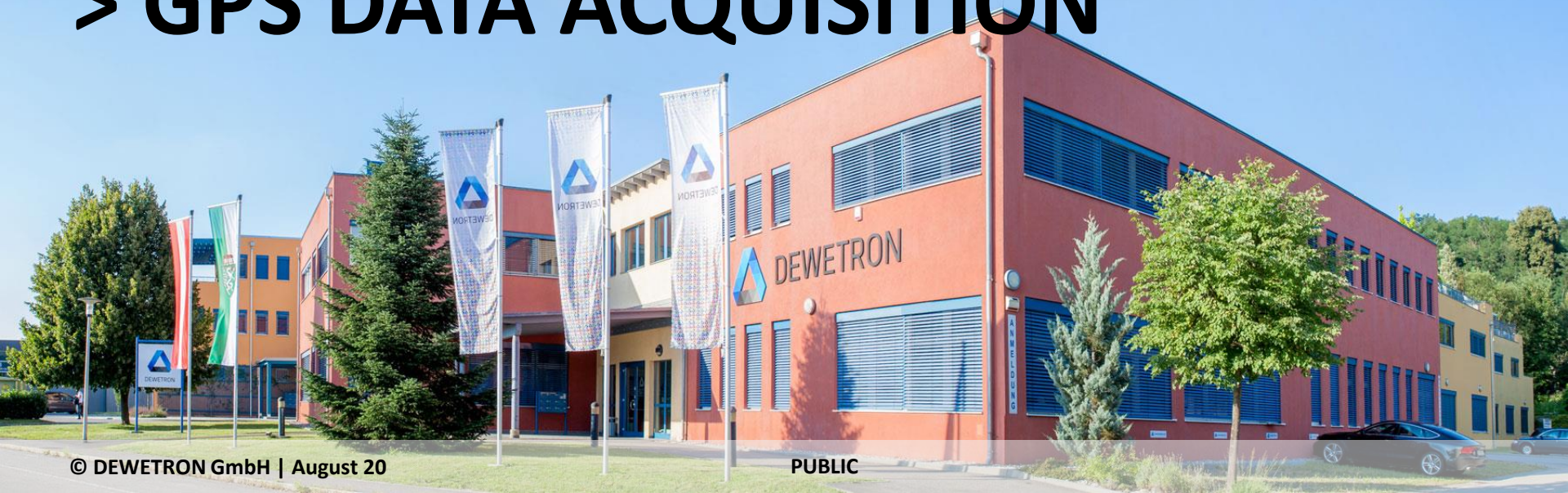


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# OXYGEN TRAINING > GPS DATA ACQUISITION



# 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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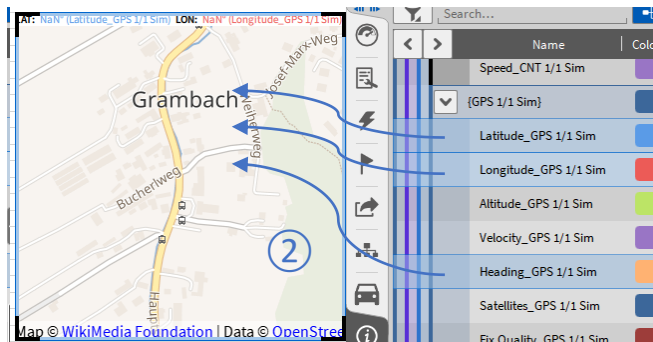
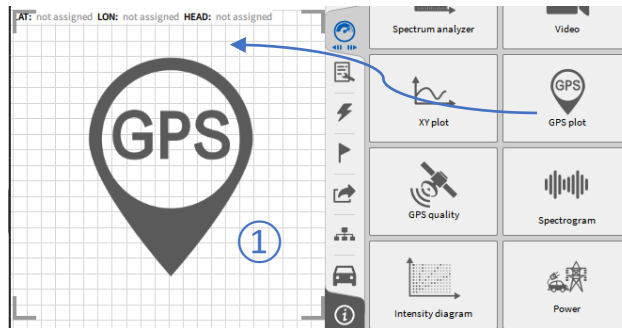
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# GPS PLOT INSTRUMENT

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
- 3 In case a internet connection is active, an Open Street Map from the current position is automatically loaded





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# 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

The screenshot shows the 'GPS plot' instrument interface. On the left, a settings panel includes 'ZOOM MODE' (Manual, Center, Fit, Rotate), 'TRACK' (Clear, Limit duration), and 'BACKGROUND IMAGE' (Import image...). A blue circle '4' highlights the 'Import image...' button. The main map area shows a satellite image overlaid on a street map. A blue circle '6' is on the street map, and another blue circle '5' is on the satellite image. A 'Positioning' popup is visible, showing 'MAP POINT 1' (Latitude: 47.020532, Longitude: 15.496724) and 'MAP POINT 2' (Latitude: 47.017844, Longitude: 15.502278). The popup also shows X and Y coordinates in pixels. At the bottom of the popup are 'Cancel' and 'Apply' buttons.

This close-up shows the satellite image overlaid on the street map. The satellite image is a rectangular area showing a building complex. The street map shows the surrounding area with roads like 'Forstgartenweg' and 'Kiesweg'. A blue circle '6' is on the street map, and another blue circle '5' is on the satellite image. The 'Positioning' popup is also visible, showing the coordinates for the two points on the satellite image.



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# GPS QUALITY INSTRUMENT

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

- 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

