

Telemetry extractor manual

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v0.3

1. Record a video with your GoPro camera (traditional video in HERO or 360 mode, Time Lapse in traditional or 360 mode). Make sure that you have turned on GPS function:

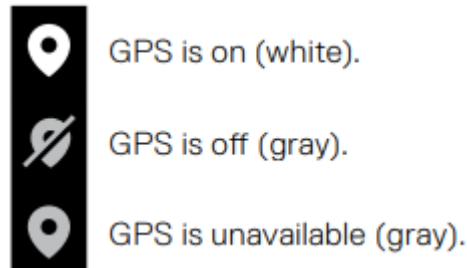


Figure 1: GoPro Max manual fragment.

If GPS is off, swipe down to access the Dashboard and Preferences. Click on the Preferences, find option Regional and there turn the GPS On.

2. Download repositories: gopro-telemetry and gpmf-extract and unpack them in GoPro-Telemetry-Extractor directory.
3. Install Node.js from <https://nodejs.org/en> using recommended download.

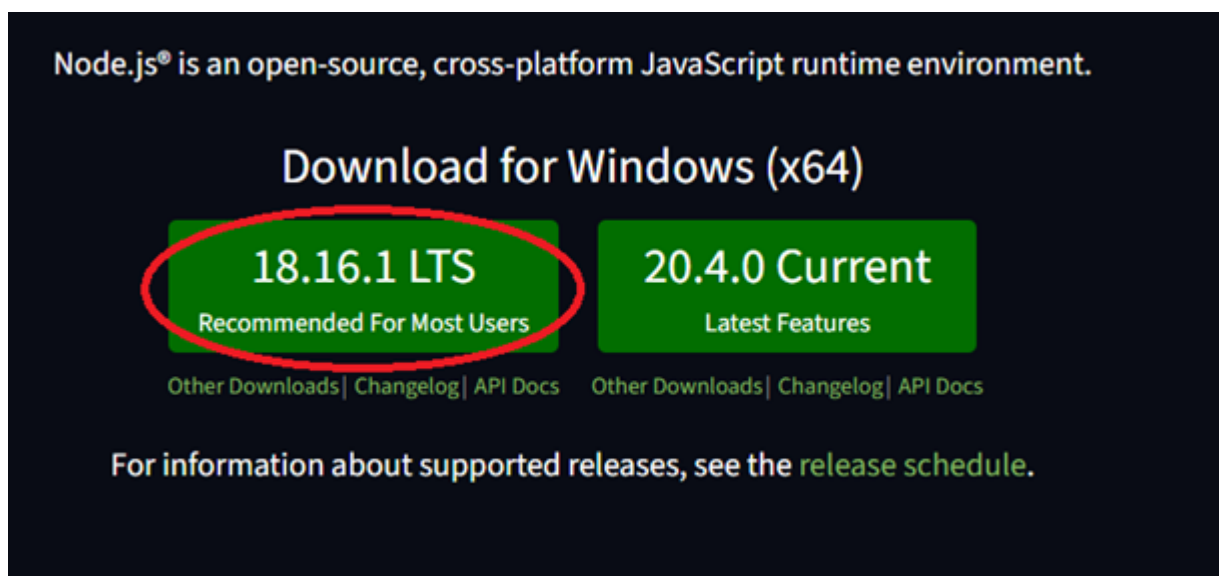
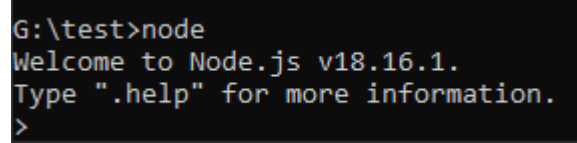


Figure 2: Nodejs website fragment.

To check if installed correctly simply open Command Prompt by typing “cmd” in the Start Menu and write “node”, if everything was done properly version of node should appear.



```
G:\test>node
Welcome to Node.js v18.16.1.
Type ".help" for more information.
>
```

Figure 3: Command Prompt fragment confirming proper installation of Nodejs.

4. Extract .LRV file into directory where repository was downloaded, steps explaining how to do it are shown below:

4.1 File structure of GoPro Max videos:

GoPro Max creates 3 types of files during recording, in 360 mode we get:

- .360 file (main video file)
- .THM file (thumbnail file)
- .LRV file (low-res video file)

In HERO mode (traditional video in 1080p or 1440p) we get:

- .MP4 file (main video file)
- .THM file (thumbnail file)
- .LRV file (low-res video file)

These files always appear after recording a classical video or a Time Lapse.

4.2 Recordings location:

To reach it, plug your GoPro Max camera to a computer using USB-c to USB cable. Now find your connected GoPro camera and navigate through directories:

GoPro MAX > GoPro MTP Client Disk Volume > DCIM > 100GOPRO

Final path should look like this:

GoPro MAX/GoPro MTP Client Disk Volume/DCIM/100GOPRO

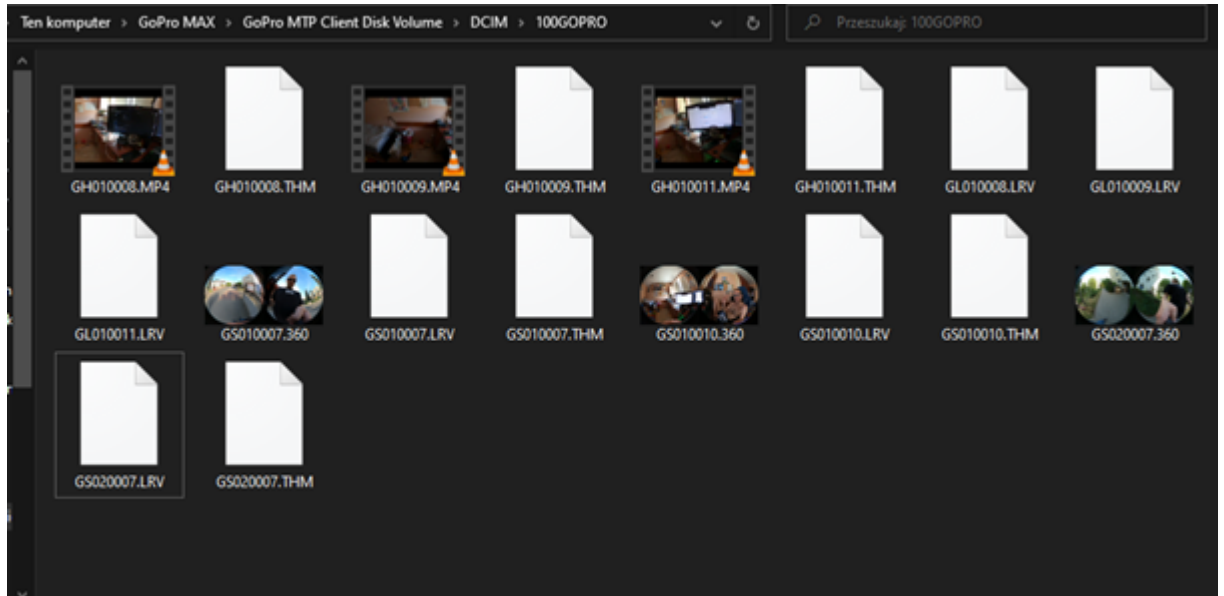


Figure 4: Video files location.

- 4.3 Choose video which you want to extract telemetry data from and copy it to a folder where repository was downloaded so a video file and extractor.js are in the same directory:

360 videos' names and their LRV versions start with GS e.g. GS020007.360, GS020007.LRV.

Regular videos' and their LRV versions' names start with GH for the former and with GL for the latter e.g. GH010008.MP4, GL010008.LRV.

While only extracting telemetry i suggest using LRV file since it will work much faster.

5. Open Command Prompt by typing "cmd" in the Start Menu and navigate to extractor.js location.
6. When in proper directory run the program by writing "node extractor.js <your video file> e.g. 'node extractor.js GS020007.LRV'. Telemetry .csv file will appear in the same location as extractor.js file.

7. To show trajectory on a map open <https://mygeodata.cloud/converter/csv-to-gps>, load received earlier .csv file and click “Show in a Map”.

The screenshot displays the MyGeodata Converter website interface, which is organized into three main sections: 1. Input Data, 2. Output Data, and 3. Conversion. The top navigation bar includes links for Home, Apps, Plans, and Sign In. In the '1. Input Data' section, the 'Input Layers to Convert' field contains 'GS010007_telemetry'. Below this, it shows 'Selected datasets count: 1' and 'Dataset(s) volume: 406.2 KB'. The 'Input parameters' table lists: File name: GS010007_telemetry, Format: VRT, Characters encoding: UTF-8, and Coordinate system: WGS 84 (EPSG:4326). A 'Dataset info...' button is present. The '2. Output Data' section shows 'Output Format' set to 'GPX' and 'Output parameters' with 'Coordinate system: WGS 84 (EPSG:4326)' and a checked 'Merge output files' option. The '3. Conversion' section features a 'Layers Extent Overview Map' with a red rectangle indicating the data's location. Below the map are 'Show in a Map' and 'Convert now!' buttons. A red warning message states: 'Your input data does not contain information about used coordinate reference system. To be able to project your data to proper place on Earth, please check whether selected coordinate system above was recognized correctly - if not, click at its name and select the correct one. To make sure it is correct, check overview map at right side of this page - a red rectangle should be placed at correct position on a World map.' A 'Notice' at the bottom mentions conversion limits of 5.0 MB or 3 datasets per month.

Figure 5: MyGeodata website to convert a csv file to GPS and view it on a map.