

The Jelbert GeoTagger "JTR" data file format

V1.04

The JTR file format is used by the Jelbert GeoTagger device to record location information relating to where photographs have been taken. One record entry is created for each press of the shutter on the camera.

The JTR file format will be updated in the future so it is important to check for the current version ID within the file that is present at the beginning of each line of data. It is currently "GEOTAG2"

Each line of the JTR file currently starts with the word "GEOTAG2" followed by a comma and then two NMEA sentences separated by a comma character with a CR at the end. The \$GPRMC (date, time and position) data is followed by the \$HCHDG (magnetic compass) data.

Although the \$GPRMC data segment contains a compass bearing, this should be ignored unless the \$HCHDG compass direction is null which can happen if the electronic compass is switched off. Use the magnetic compass bearing in preference to the GPS derived compass.

The two NMEA checksums can be ignored for the time being.

Data information

This section details the two NMEA sentences used in the JTR file. The fields of particular interest are highlighted in yellow.

The \$GPRMC and \$HCHDG header words are NOT included in the JTR file, just their corresponding comma separated data.

The important data segments are highlighted in YELLOW

\$GPRMC

(Recommended minimum specific GPS/Transit data)

NOTE: NMEA 0183 version 3.00 active the Mode indicator field is added. The GARMIN Geko 301 supports version 3 as detailed below.

```
hhmmss.ss,A,llll.ll,a,yyyy.yy,a,x.x,x.x,ddmmyy,x.x,a,m*hh
```

Field #
 1 = UTC time of fix
 2 = Data status (A=Valid GPS position, V=navigation receiver warning)
 3 = Latitude of fix
 4 = N or S of longitude
 5 = Longitude of fix
 6 = E or W of longitude
 7 = Speed over ground in knots
 8 = Track made good in degrees True - (see note later)
 9 = UTC date of fix
 10 = Magnetic variation degrees (Easterly var. subtracts from true course)
 11 = E or W of magnetic variation
 12 = Mode indicator, (A=Autonomous, D=Differential, E=Estimated, N=Data not valid)
 13 = Checksum

... a comma then separates the next string of data...

\$HCHDG

(Magnetic Compass Heading)

This sentence is used on Garmin eTrex summit, Vista, Geko 301 and GPS76S receivers to output the value of the internal flux-gate compass. Only the magnetic heading and magnetic variation is shown in the message.

,101.1,,,7.1,W*3C

where:

HCHDG	Magnetic heading, deviation, variation
101.1	heading
,	deviation (no data)
7.1,W	variation

Notes for parsing this data

Each line of the JTR file has the word "GEOTAG2" at the beginning of it. The parsing code should look for this string in order to know how to parse it. Future versions of the JTR file format may be different and include different words (e.g. GEOTAG3)

Data should be screened for duplicates and if identical then ignore.

When parsing a JTR file in GEOTAG2 format, the record line being processed must have the "data status" flag reading as "A" (valid data) for it to be used.

If the compass direction data is missing or null, use the GPS heading information instead (highlighted in blue). This can happen if the magnetic compass is accidentally switched off.

When at all possible, use the magnetic flux compass data in the \$HCHDG section in preference to the GPS "track made good" data.

To get the correct compass heading you need to combine the heading reading with the variation reading. Deviation is not currently supported by the Geko 301.

e.g.

```
GEOTAG2,,V,,,,,,,,,150906,2.8,W,N*2B,176.8,,,2.8,W*39
```

Using the example above, take the 176.8 reading and add 2.8 degrees (add because of the "W" but subtract if it says "E"). In this case the reading will be 179.6

If you have to use the GPS track made good data instead of the compass, then you will need to do the same math on that data (highlighted in blue).

When merging JTR data using timestamps on images, it is advisable that a time window of around +/- 6 seconds is given in order to make the match. This should ideally be user configurable. If the user does not keep the cameras clock synchronized with the GPS clock then the time stamps can drift out making matching more difficult. Having a configurable matching window helps make the system more robust.

Please use the example JTR file available from the web site.

For help supporting JTR files in your application, please email support@geotagger.co.uk