

Submitting files from Trimble 4800 to OPUS

This Technical Tip provides instructions for preparing DAT files from a Trimble 4800 GPS receiver for submission to OPUS.

Now that all the automated systems available in the modern world have made all of us very lazy, one would expect to be able to simply submit a DAT file from a Trimble 4800 to OPUS and get back a position.

Sorry to say, but instead of a position you will probably receive something that looks like –

```
FILE: 90110761.DAT 000006412
```

```
2005 NOTE: The IGS precise and IGS rapid orbits were not available
2005 at processing time. The IGS ultra-rapid orbit was/will be used to
2005 process the data.
2005
1008 NOTE: Antenna offsets supplied by the user were zero. Coordinates
1008 returned will be for the antenna reference point (ARP).
1008
9011 OPUS could not process the data file that was submitted. The data was
9011 either very noisy or it was collected in kinematic mode.
9011
```

So that didn't accomplish anything useful.

There was a time when one could convert the DAT file from a Trimble 4800 to RINEX and make a little tweak to the header in the OBS file to trick the processor into ignoring certain data in the RINEX file. An explanation of how that worked is at the end of this document. NGS made some changes to the PAGES-NT processor in October 2008, and that tweak has not worked since the change.

So now the solution is to submit to OPUS a RINEX file containing only the L1, L2, and C1 observables.

One easy way to do that is to use the TEQC utility from UNAVCO to convert to RINEX as well as strip out the other unusable observables.

Go to <http://facility.unavco.org/software/teqc/teqc.html#executables> and download the TEQC executables for your operating system.

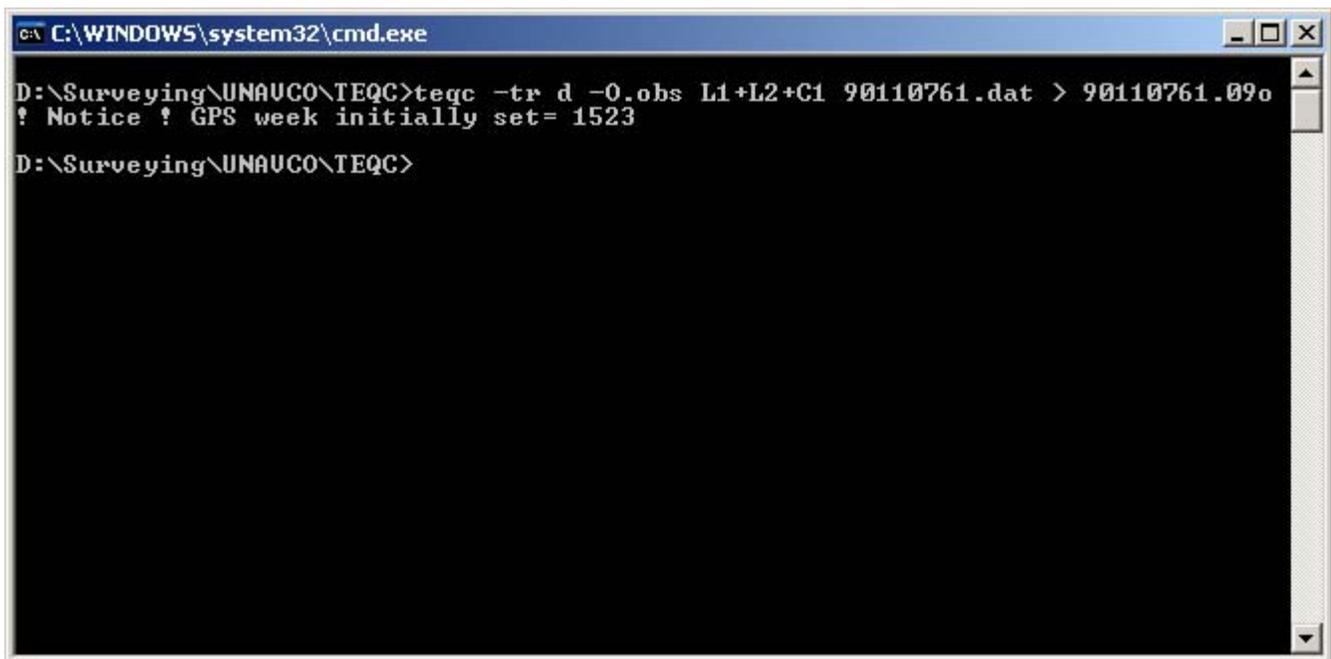
The following command will convert the Trimble DAT file to RINEX and cut out everything except the L1, L2, and C1 observables:

```
teqc -tr d -O.obs L1+L2+C1 filename.dat > filename.YY0
```

where YY represents the last two digits of the year.

The following screen snap was taken after doing the conversion on a DAT file named 90110761.dat from the CMD.EXE prompt of Windows XP.

You are not losing any usable data here because what comes out as P2 data is identical to the C1 data anyway (see page 3 of this document.)

A screenshot of a Windows command prompt window. The title bar reads "C:\WINDOWS\system32\cmd.exe". The command prompt shows the following text:

```
D:\Surveying\UNAUCC\TEQC>teqc -tr d -O.obs L1+L2+C1 90110761.dat > 90110761.09o
! Notice ! GPS week initially set= 1523
D:\Surveying\UNAUCC\TEQC>
```

OPUS processed the OBS file made above without any problems.

If you determine you want to use one of the Trimble RINEX converters the process will require two steps – first the conversion to RINEX and then stripping out the unusable observables.

It is believed that either method will produce essentially the same results. If you find evidence suggesting otherwise please advise.

The newer Trimble RINEX converter (as used with Trimble Business Center) offers the option to generate a RINEX Ver 3.00 file. Since TEQC does not work with RINEX Ver 3.XX files, make sure the converter is configured so the RINEX output is no higher than Ver 2.11.

To simply strip out unusable observables from a RINEX OBS file named `filenam1.YY0` and generate a RINEX OBS file named `filenam2.YY0` use the following command:

```
teqc -O.obs L1+L2+C1 filenam1.YY0 > filenam2.YY0
```

where YY represents the last two digits of the year.

The following FAQ from the OPUS web page explains what happens when Trimble 4800 DAT files are converted to RINEX, how to make the tweak mentioned above, and explains why that tweak used to work.

