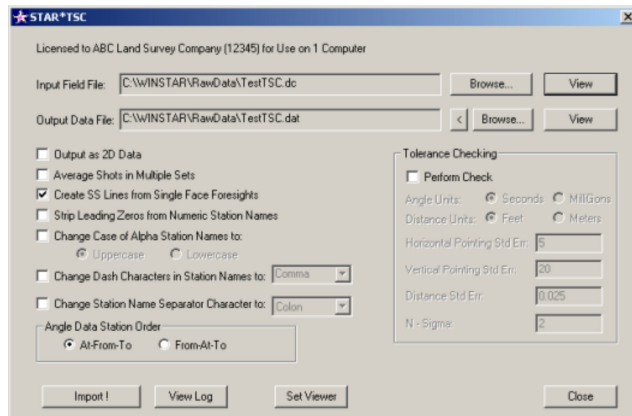


STAR*NET CONVERSION UTILITIES

STAR*TSC CONVERSION UTILITY

STAR*TSC converts Trimble TSC1 and TSCe "dc" data collector files to STAR*NET input data format.



Running the program is easy. First browse for the TSC field file to convert, then browse for an output file (a new or existing file), set desired options and press the "Import" button. If errors or warnings are found, they are listed in a Log file - review by pressing "View Log" button. When errors are found, data will not be created in the output file. In this case, review the errors listed in the Log File, edit the raw file to make necessary corrections and re-import. The end of the Log file will list any converted data up to the first error, which may be helpful in finding problems.

When browsing for the output file, you can press one of two buttons. The standard "Browse" button opens the output file dialog in the same directory as the raw field file and offers the same file name as the raw field file, but with a "dat" extension. Of course you can modify the offered name to whatever you wish. The smaller "<" button opens the output file dialog in the same directory already shown in the field to the left - useful when you've stored output in a different directory during the previous run, and you want to output to that directory again.

A "View" button, next to each of the input and output file fields, brings up an editor. So besides viewing a file, you can also edit it. By default, the editor assigned is Windows "Notepad," but just as in the STAR*NET program, you can set an editor of your choice by pressing the "Set Viewer" button and browsing for the editor program you prefer.

Selecting Processing Options

- Output as 2D Data - By default, STAR*NET data is created in a 3D output format. STAR*NET can handle 3D formatted data in both 2D and 3D adjustments. However if you have projects that are 2D and you prefer to have data immediately converted to simple 2D format by reducing slope distance and zenith observations to horizontal distances, you can select this option.

Note that if you are extracting data to a 3D data file, HI and HT values in the raw field file must be provided. If you are extracting to a 2D file, HI and HT values are not needed for the reduction and are therefore not required in the field file.

- Average Shots in Multiple Sets - When you are in set collection mode in the field, you can collect multiple "sets" during an instrument occupation (sets following a "02" occupy code in the raw DC field file). By default, the output will include meaned Face-1 and Face-2 observations for every target in every set. So for example, if target point 101 appears in 4 sets during a single instrument occupation, that point will appear four times in the output for that instrument setup. But by selecting this option, all shots to the same target will be averaged for the instrument setup and each target will appear only once.
- Create SS Lines from Single Face Foresights - By default, foresight observations are created as "M" measurement lines. Setting this option causes single-face foresight observations to be created as "SS" sideshot lines. (Sideshots are non-redundant topo or detail shots calculated by STAR*NET after an adjustment has completed.) If you select this option and some of the SS lines created are actually redundant observations, these data lines must be edited back to "M" lines before running your adjustment!
- Strip Leading Zeros from Numeric Station Names - This option is in the GPS Importer utility in STAR*NET-PRO and is included in this utility for compatibility since the TSC1 and TSCe devices can collect both GPS vectors and conventional observations. You would obviously want to use the same options for importing both vectors and conventional.
- Change Case of Alpha Station Names to - This option, as with the one above, is in the GPS Importer utility in STAR*NET-PRO and is included in this utility for compatibility.
- Change Dash Characters in Station Names to - This option, as with the one above, is in the GPS Importer utility in STAR*NET-PRO and is included in this utility for compatibility.
- Change Dash Station Separator Character to - By default, the dash is used for station name separators (i.e. 121-120-122). If some of your station names already contain dashes and you wish to keep them, this option allows you to change the separator to some other character.
- Angle Data Station Order - This is simply an output preference. Some surveyors prefer to see angular observations shown as At-From-To, others as From-At-To.
- Tolerance Checking - This feature is at least temporarily in this release. It may be removed from a future release. Some users have indicated that tolerance checking of observations in a set is always (or should be) done in the field, and having tolerance checking in this program is unnecessary and may be confusing. Your recommendations please!

Notes on Input and Output

The program assumes that raw field files have either a "dc" or "raw" extension. If you have a field file with a different extension, choose "All Files (*.*)" from the "File of type" field in the file selection dialog and then select the file you wish to convert from the complete list.

Stored Points found in a TSC field file are copied to the data file as comments, lines beginning with a "#" character. To use one of these points in STAR*NET data, uncomment the data line and edit-in the appropriate fixity codes. Example: C 25 10000.000 10000.000 500.000 !!

All observations lines found in the field file include what Trimble calls a "Classification" which indicates whether the observation is to a normal point, or some other type of point. There is a classification defined as "Deleted" and when an observation has this classification, it will not be used in the conversion to STAR*NET data.

The output data file created by this routine can be moved (using Windows Explorer) into your project directory for use by STAR*NET. The entire data file can be added to the project using the "Input Data Files" dialog (see the STAR*NET manual), or using a text editor you can copy and paste parts of the file contents into a data file that already exists as part of your STAR*NET project.

All fields and option settings shown on the STAR*TSC dialog are stored in the registry when you close the program and are restored the next time you run the program.

The "Log File" is an important file that is created during a run. It lists any errors and warnings produced during the run and references actual line numbers in the field file. The log file has the same name as the input field file but with a "log" extension and it is always created in the same directory as the input file. Review it by pressing the "View Log" button.

In the field "dc" file, blank lines and lines beginning with a "#" character are ignored. You can edit a raw field file and prefix any line with a "#" character rather than deleting the line.

The program also supports ".DATA ON" and ".DATA OFF" inline options as with most other STAR*NET conversion utilities. To cause parts of a field file to be ignored by this converter, simply insert a ".DATA OFF" line before and a ".DATA ON" line after a section of data to be ignored.

Example Input Field File

The following is the beginning of the sample TestTSC.dc field file supplied with the program. You can use this file as input to make a test run with the STAR*TSC converter utility.

Note that some of this data has been edited by truncating long lines that would not fit in the enclosed space. Review the TestTSC.dc file supplied for complete and correct field data.

```
00NMSC V07-50      610704-Feb-03 14:36 133111
10NMWCOFFICE      122211
13TSTime Date 02/04/2003 Time 19:14:06
95FC
D4NM1199.99999999984      100000
65KI
64KI>
49KI1
C8NM2
50KI
81KI1
69KI      WP1      5000.0000000000005000.00000000000100.000000000000MAG NAIL/SHINER 12
69KI      WP6      5000.0000000000005198.45000000000100.310000000000MAG NAIL/SHINER 12
75NMTTopcon GTS 500 0000003      279.700000000000106.13333333333
C7NM
D2NM      0.00000000000000
C3AJ111
77NM5.180000000000000.000000000000000.000000000000000
69FD      WP1      5000.0000000000005000.00000000000100.000000000000MAG NAIL/SHINER 12
02NM      WP1      5.110000000000000
07NM      WP1      WP6      359.999305555555
77NM5.180000000000000.000000000000000.000000000000000
79F1      WP1      WP6      198.44960310000089.89305555555550.000000000000MAG NAIL/SHINER 5
A6TP      0.000742593570700.00958754709712
77NM5.080000000000000.000000000000000.000000000000000
79F1      WP1      WP2      310.97437805000089.4888888888889273.150000000000MAG NAIL/SHINER 1
77NM5.180000000000000.000000000000000.000000000000000
79F2      WP1      WP6      198.449603100000270.106944444444179.998611111111MAG NAIL/SHINER 5
A6TP179.9993055560720.004810545749610.00000000000027
77NM5.080000000000000.000000000000000.000000000000000
79F2      WP1      WP2      310.974378050000270.506944444444493.1513888888889MAG NAIL/SHINER 1
B7MP      WP1      NAIL/SHINER 1
13RR00H=0.00000000000000V=0.00000000000000S=0.00000000000000
13RR00      S=0.00000000000000 2
C4MA      WP2      MAG NAIL/SHINER      WP6      273.151388888888989.490972222223310.
79F1      WP1      100      23.089953820000088.0416666666667314.112500000000SSMH      1
79F1      WP1      101      37.214925570000089.652777777777844.944444444444ECLP      1
75NMTTopcon GTS 500 0000003      279.700000000000106.13333333333
C7NM
D2NM      0.00000000000000
C3AJ111
77NM5.000000000000000.000000000000000.000000000000000
69FD      WP2      5310.491857911025017.09495019154102.79272555246MAG NAIL/SHINER 11
02NM      WP2      5.190000000000000
07NM      WP2      WP1      0.00000000000000
77NM5.000000000000000.000000000000000.000000000000000
79F1      WP2      WP1      310.97437805000090.548611111111110.000000000000MAG NAIL/SHINER 5
A6TP      0.00198286408937-0.0051695529402
79F1      WP2      WP3      146.52970694000090.0305555555556271.390277777778MAG NAIL/SHINER 1
79F2      WP2      WP1      310.969378060000269.452777777778180.000000000000MAG NAIL/SHINER 5
B7MP      WP2      NAIL/SHINER 5
13RR00H=0.00000000000000V=0.00000000000000S=0.00249999500003
13RR00      S=-0.0024999950001 2
C4MA      WP1      MAG NAIL/SHINER      WP1      0.0000000000000090.5479166666667310.971878
79F2      WP2      WP3      146.524706950000269.96805555555591.390277777778MAG NAIL/SHINER 1
B7MP      WP2      NAIL/SHINER 1
13RR00H=0.00000000000000V=0.00000000000000S=0.00249999500001
13RR00      S=-0.0024999950000 2
75NMTTopcon GTS 500 0000003      279.700000000000106.13333333333
C7NM
D2NM      0.00000000000000
C3AJ111
75NMTTopcon GTS 500 0000003      279.700000000000106.13333333333
C7NM
etc. ...
```

Example Output File

The following is the resulting TestTSC.dat output file in STAR*NET format. Note that this file was created using the option settings displayed on the first page of this manual.

```
# STAR*TSC Version 7.2.2
# Copyright 2012 MicroSurvey Software Inc.

# Input Field File : C:\RawData\TestTSC.dc
# Date Processed   : 04-15-2004 16:18:16

# Job ID: TESTDATA

.Units FeetUS
.Units DMS
.Order AtFromTo
.Sep -
.3D

# C WP1      5000.00000      5000.00000      100.00000 'MAG NAIL/SHINER
```

#	C	WP6	5000.00000	5198.45000	100.31000	'MAG NAIL/SHINER
DV	WP1-WP6		198.4496	89-53-35.00	5.110/5.180	'MAG NAIL/SHINER
M	WP1-WP6-WP2	273-09-05.00	310.9744	89-29-27.50	5.110/5.080	'MAG NAIL/SHINER
SS	WP1-WP6-100	314-06-47.50	23.0900	88-02-30.00	5.110/5.080	'SSMH
SS	WP1-WP6-101	44-56-42.50	37.2149	89-39-10.00	5.110/5.080	'ECLP
DV	WP2-WP1		310.9719	90-32-52.50	5.190/5.000	'MAG NAIL/SHINER
M	WP2-WP1-WP3	271-23-25.00	146.5272	90-01-52.50	5.190/5.000	'MAG NAIL/SHINER
DV	WP3-WP2		146.5297	89-59-17.50	4.940/5.080	'MAG NAIL/SHINER
M	WP3-WP2-WP4	254-30-45.00	135.3547	90-36-30.00	4.940/4.820	'MAG NAIL/SHINER
SS	WP3-WP2-102	94-17-07.50	49.8049	89-01-40.00	4.940/5.400	'TR10D
SS	WP3-WP2-103	162-19-02.50	46.8549	89-36-25.00	4.940/5.400	'ECLP
DV	WP4-WP3		135.3522	89-28-57.50	4.940/4.850	'MAG NAIL/SHINER
M	WP4-WP3-WP5	175-18-32.50	83.2698	90-25-00.00	4.940/4.790	'CUT +
DV	WP5-WP4		83.2673	89-46-42.50	4.910/4.780	'MAG NAIL/SHINER
M	WP5-WP4-WP6	204-10-07.50	86.7648	90-33-40.00	4.910/4.880	'MAG NAIL/SHINER
DV	WP6-WP5		86.7698	89-34-20.00	5.000/4.830	'CUT +
M	WP6-WP5-WP1	261-28-32.50	198.4496	90-06-30.00	5.000/4.930	'MAG NAIL/SHINER