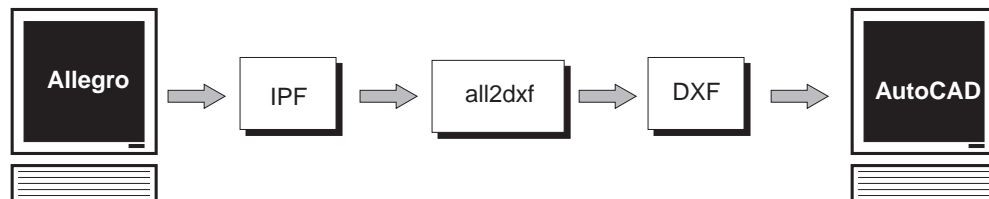# Chapter 3

Allegro to DXF Translator

all2dxf, reads Cadence Allegro's plot file format and translates it into an AutoCAD DXF file format. The user first needs to create an intermediate plot file from Allegro. Once this file is written to disk you can launch the all2dxf translator and create a DXF file.

all2dxf Command Line Syntax

```
        all2dxf  input_file[.plt]  [output_file[.dxf]  [options]]
```

where

input_file   name of the input Allegro intermediate plt file

output_file   name of the output dxf file - if not present
                    will default to input_file.dxf

[options]

-l:N   output everything on DXF layer N. Default is to
                    create a DXF layer for each color found in the
                    intermediate plot file.

-h   returns the version and command line syntax

-s:scale_factor   scale factor (default=1) DXF would be in mils.
                    a scale factor of 0.001 would produce a DXF in inches

-font:fontname   the name of the DXF font file to use for text. If
                    not specified defaults to the most standard font,
                    txt.shx.

-xf:XXX   adjusts globally the height-to-width ratio of text
                    text string in the DXF file. XXX defaults to 1.0.
                    Reasonable range: XXX between 0.8 and 1.2. Used to
                    tweak appearance of text.

-h   returns the version and command line syntax

Allegro to DXF Entity Mapping

Allegro Plot File	DXF Entity
drawing Size	DXF Limit Variable
line (width)	Polyline
arc (width)	Polyline arc
text	Text
mirroring	Supported
rotation	Supported
justification	Supported
Filled Rectangles	Solid

Figures

1. Point	AutoCAD Point Entity
2. Circle	AutoCAD Circle
3. Octagon	Built from zero width closed polyline
4. Cross	Built from 2 zero width closed polyline
5. Square	Built from zero width closed polyline
6. Rectangle	Built from zero width closed polyline
7. Diamond18	Rotated square
8. DRC Error	Circle with E*
9. Anti-pad	Circle*
10. Thermal-pad	Built from 4 zero width closed polylines
11. Oblong x	ZWCP (arc bulge at each end)
12. Oblong y	ZWCP (arc bulge at each end)
13. Butterfly x	2 quarter pies built using a zero width closed polyline
14. Butterfly y	2 quarter pies built zero width closed polyline
15. Hexagon X	built using zero width closed polyline flat vertical
16. Hexagon Y	built using zero width closed polyline flat side
17. Test Point	AutoCAD point
18. Triangle 1-4	zero width closed polyline
Polygon	zero width closed polyline
Color Numbers	Mapped to AutoCAD layers. Each layer is assigned the appropriate color.

Notes

ZWCP - Abbreviation for AutoCAD's "zero width closed polyline. "Many figures need to be built from this since AutoCAD has no equivalent entity such as a true polygon. Please note that AutoCAD's zero width closed polyline is not solid filled. This is a limitation of the DXF database and not a defect in the translator.

AutoCAD Points - AutoCAD has a point entity - but the actual appearance of the point is affected by two AutoCAD system variables - PDMODE (the type of point) and PDSIZE (the size of the point.) If the points do not appear in the AutoCAD drawing it is because PDSIZE=0 most likely.

Text Handling

AutoCAD Text styles are structured much differently that Allegro's style. All2dxf creates a DXF text style called STANDARD. This style then references a font file, by default, txt.shx. One can specify any a different SHX font file name at the command line.

The font file, txt.shx (or whatever SHX file is specified from the command line) must reside in the directory with the all2dxf program is located or no text will be output. all2dxf requires The SHX file in order to compute insertion points for text.

DXF File Characteristics

DXF files always define layer 0, even if there is no data on this layer.

The DXF file created by all2dxf will be flat - i.e. no blocks since the allegro plot file is flat.

The DXF file has no units - however it will appear to be 1000X too big to users who are accustomed to working in inches unless the scale option **-s:0.001** is used. This is because the basic unit of Allegro's plot file is the mil.

Log File Output

all2dxf writes a log file to disk, input_file_name.log, that records the following information:

```
Pogram version and date compiled

name of the input file

command line options and parameters

Ambiguous Entities Encountered

Please send this file to Artwork together with a print or plot of
the file generated by Allegro. You can reach Artwork at (408) 426-6163 or
email at info@artwork.com

found diamond18 on line 2556

      first occurrence at X=        Y=

found triangle4 on line 5678

      first occurrence at X=        Y=

Warnings and Errors

      unrecognized entity XXX found on line 3080

      unexpected 'EOF' on line 10,800
```

Sample File

Artwork has created a sample Allegro plot file called test_pat.plt that illustrates the handling of text and Allegro "figures." You can see how different layers are supported and how text slant is supported.