Laser-Scan Ltd.

PSEXPORT User Guide

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CONTENTS

MODULE PSEXPORT

FUNCTION

This document describes the PostScript export utility PSEXPORT. This program is used to translate the PostScript plot output produced by Laser-Scan plotting software into other formats for export. Formats currently supported are Adobe Illustrator 88, and Encapsulated PostScript.

See the document "FPP Plotters User Guide, PostScript" in the PLOTTING package documentation for information on generating PostScript plot file using Laser-Scan plotting software (FPP and LITES2).

Note that the format of PostScript output generated by Laser-Scan software is liable to change in future releases (of GKSPOSTSCRIPTSHR.EXE). PSEXPORT is intended to work only with the current format. A new version will be released if format changes would cause it no longer to work. Any such new version is not guaranteed to work with plot files produced by previous releases of software.

For some output formats, care must be taken with the format of the parts of the PostScript file which can be specified directly by the user, for example colour tables in the LSL$PS_HEADER file, or fonts in the LSL$PS_FONTLIST file. These details are explained in the sections below for each output format.

FORMAT

```
$ PSEXPORT PS-input-file [Output-file]
```

Command qualifiers	**Default**
/FORMAT=string	none
/LOG	/NOLOG

PROMPTS

PS-input-file: PostScript-input-file-name

Output-file: Output-file-name

PARAMETERS

PostScript-input-file-name

- specifies the input PostScript file. The default file extension is .PS.

Output-file-name

- specifies the output file. This parameter is optional - the default is the name part of the input file with an extension which depends on the output format.

COMMAND QUALIFIERS

/FORMAT=string

- specifies the output format to be used. Formats available are AI88 (Adobe Illustrator 88) and EPS (Encapsulated PostScript). There is no default - this qualifier is compulsory.

/LOG
/NOLOG **(default)**

- specifies that informational messages are to be printed during the run.

FORMATS

AI88 - ADOBE ILLUSTRATOR 88

Adobe Illustrator 88 format is intended for import into the Adobe Illustrator family of software. The format is described in the Adobe Systems document "Adobe Illustrator Document Format, Specification", available on request from Adobe Systems Inc. Data in this format cannot be sent to a PostScript printer without being imported and then saved by Adobe Illustrator. The file extension of the output defaults to .AI.

Much of the PostScript produced by GKSPOSTSCRIPTSHR is already suitable for this purpose, but PSEXPORT has to make some changes to the file. The first line of the output file is:

```
%!PS-Adobe-2.0 EPSF-1.2
```

The second line is the %%BoundingBox header comment, obtained by searching the input file for such a comment containing the actual bounding values, and not the directive (atend). This is followed by a %%TemplateBox header comment specifying a single point area in the centre of the bounding box.

This completes the Prolog section of the output file. The input file is then searched for a %%BeginSetup comment, and any colours and fonts defined are then processed (see below) until the %%EndSetup comment is found.

PSEXPORT then searches for an %%EndPageSetup comment, and processes the plot data (see below) until either the %%Trailer or %%Page comment is found (in the latter case, the subsequent pages are skipped). The output file is then ended by adding a %%Trailer comment.

Colour definitions in the Setup section of the input file are recognised provided that they are in the form:

```
COLTAB n {r g b setrgbcolor} put
```

where n is the colour index, and r g b are the colour components. This is the format produced from the colour table on logical name LSL$PS_COLOUR. If the user specifies their own colour table in the file on logical name LSL$PS_HEADER, then it will still work provided that the above format is adhered to. The forms:

```
COLTAB n {c m y k setcmykcolor} put, and
COLTAB n {g setgray} put
```

may be used also.

Font definitions in the Setup section of the input file are recognised provided that they are in the form:

```
FNTDICT begin /Fn {
/Times-Roman findfont
1.5 scalefont
```

```
...optional other stuff...
} def end
```

where n is the font number, Times-Roman is the font name, and the 1.5 is a scale factor (the scalefont line is optional). This is the format produced using information in the file on logical name LSL$PS_FONTLIST (provided that any FIND directives use a form similar to the findfont line above). If the user specifies their own fonts in the file on logical name LSL$PS_HEADER, then they will still work provided that the above format is adhered to.

The steps involved in processing the actual plot data are:

- Skip any 'restore' and 'showpage' operators.
- Skip any circles and arcs ('AA' or 'AC') and produce warning message. These are not allowed in AI88 format. The PS file will only include these if the hardware flag is set in the FRT file for circle or arc graphical types.
- Terminate the program if any raster images are found. These are not supported in AI88 format.
- Convert any colour settings ('k' or 'K') to use cmyk values rather than indices. The 'g' or 'G' operators are used instead if the colour represents a grey level.
- Convert any font settings ('z') to use the AI88 format.
- Convert any texts ('e' and 't') to use the AI88 format.
- Convert any pen up moves ('m') occurring in the middle of paths to stroke out the previous path and begin a new one. Paths may not include pen up moves in AI88 format.

The PostScript file is expected to contain 'u' and 'U' markers at the beginning and end of features. Adobe Illustrator uses these to group items into an object. These same markers are also used for groups of features. See the PostScript chapter of the Plotters User Guide for details.

Note that Adobe Illustrator fills areas in the same way as the PostScript operator 'fill' (non-zero winding rule), whereas PostScript produced by Laser-Scan software uses 'eofill' (even-odd rule). This could result in areas with holes drawing differently depending on how the boundary is constructed.

EPS - ENCAPSULATED POSTSCRIPT

Encapsulated PostScript format is intended to be included within another document by other utilities. The format is described in the EPSF section of the Adobe Systems document "PostScript Language Reference Manual", available as ISBN 0-201-18127-4. Data in this format is still valid PostScript, and may also be sent directly to a PostScript printer. The file extension of the output defaults to

.EPS.

PSEXPORT makes few changes to the input file for this format. The first line of the output file is:

%!PS-Adobe-3.0 EPSF-3.0

The second line is the %%BoundingBox header comment, obtained by searching the input file for such a comment containing the actual bounding values, and not the directive (atend). After these, the input file is copied unchanged, except that any %!PS or %%BoundingBox lines are omitted.

EXAMPLES

```
$ PSEXPORT plotfile/log/format=AI88
%PSEXPORT-I-OPENIN, input file PLOTFILE.PS opened
%PSEXPORT-I-OPENOUT, output file PLOTFILE.AI created
 ELAPSED:    0 00:21:37.57  CPU: 0:09:14.07  BUFIO: 530  DIRIO: 4013
  FAULTS: 8
```

The /LOG qualifier is used to obtain the printed information. Input file plotfile.ps in the current directory is converted to AI88 format. The output file defaults to plotfile.ai in the current directory.

MESSAGES (INFORMATIONAL)

These messages give information only, and require no immediate action by the user. They are used to provide information on the current state of the program, or to supply explanatory information in support of a warning or error message.

OPENIN, input file 'filename' opened

Explanation: The input file has been opened.

User action: None.

OPENOUT, output file 'filename' created

Explanation: The output file has been created.

User action: None.

MESSAGES (WARNING)

These messages are output when an error has occurred that can be corrected immediately by the user or that the program will attempt to overcome.

ILLEGALARC, circle arc skipped in input file, not supported

Explanation: The output format does not support circles or arcs.

User action: Do not use hardware circles or arcs when generating the PS file.

MULTPAGES, input file contains more than one page, only first processed

Explanation: The output format may only contain a single page.

User action: Generate each page, or plot, in a separate PS file.

MESSAGES (ERROR)

These messages indicate an error in processing which will cause the program to terminate. The most likely causes are a corrupt or otherwise invalid input file, or an error related to command line processing and file manipulation.

ERROPIN, unable to open input file 'filename'

Explanation: The input file cannot be opened.

User action: Check that the input filename is correct.

ERROPOUT, unable to create output file 'filename'

Explanation: The output file cannot be created.

User action: Check that the directory is valid, and that you have write access to it.

ILLEGALIMAGE, raster image encountered in input file, not supported

Explanation: The output format does not support raster images.

User action: Ensure that the PS file does not contain raster images.

NOBBOX, unable to find %%BoundingBox comment in input file

Explanation: The output format required bounding box information, but no %%BoundingBox comment was found in the input PS file.

User action: Ensure that the PS file contains a %%BoundingBox comment.

NOENDSETUP, unable to find %%EndSetup comment in input file

Explanation: The program looks for colour and font information in a section of the PS file which ends with the comment %%EndSetup.

User action: Ensure that the PS file contains an %%EndSetup comment.

NOPLOT, unable to find %%EndPageSetup comment in input file

Explanation: The program looks for plot data in the PS file immediately after the comment %%EndPageSetup.

User action: Ensure that the PS file contains an %%EndPageSetup comment.

NOSETUP, unable to find %%BeginSetup comment in input file

Explanation: The program looks for colour and font information in a section of the PS file beginning with the comment %%BeginSetup.

User action: Ensure that the PS file contains a %%BeginSetup comment.

NOTRAILER, unable to find %%Trailer comment in input file

Explanation: The program expects the plot data in the PS file to end with the comment %%Trailer.

User action: Ensure that the PS file contains a %%Trailer comment.

MESSAGES (OTHER)

In addition to the above messages which are generated by the program itself, other messages may be produced by the command line interpreter (CLI) and by Laser-Scan libraries. In particular, messages may be generated by the IFF library and by the Laser-Scan I/O library, LSLLIB. IFF library messages are introduced by '%IFF' and are documented in the IFF library users' guide. In most cases IFF errors will be due to a corrupt input file, and this should be the first area of investigation. If the cause of the error cannot be traced by the user, and Laser-Scan are consulted, then the output file should be preserved to facilitate diagnosis. LSLLIB messages are introduced by '%LSLLIB' and are generally self-explanatory. They are used to explain the details of program generated errors.

INDEX