

# Graphics drivers for L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>\*

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This file is maintained by the L<sup>A</sup>T<sub>E</sub>X Project team.  
Bug reports can be opened (category `graphics`) at  
<https://latex-project.org/bugs.html>.

## 1 Driver files

This file implements some of the currently supported drivers. If the driver you use is not in this list then a ‘.def’ file may be distributed with This graphics bundle, or may be distributed with your driver.

If not, send us some details of the driver’s `\special` syntax, and we will try to produce a suitable file.

Note that some of these files are for drivers to which we have no access, so they are untested. Please send any corrections to the latexbugs address.

## 2 Colour

Most of the drivers that support colour use one of three methods.

- `color1`: ‘dvips’ style colour specials.
- `color2`: ‘textures’ style colour specials.
- `color3`: Colour implemented via literal PostScript specials.
- `color4`: Colour implemented by specials that only support RGB, i.e., Red Green Blue specified as integers in the range 0–255. Other models converted to this within T<sub>E</sub>X.

Some drivers do not use any of these modules and have their own code. Note that drivers using the ‘`color3`’ code can not fully support the L<sup>A</sup>T<sub>E</sub>X colour commands.

```
1 (*color1 | color2 | color3 | color4)
2 \def\color@arg#1{%
3   \dimen@#1\p@
4   \ifdim\dimen@<\z@\dimen@\maxdimen\fi
5   \ifdim\dimen@>\p@
6     \PackageError{color}{Argument ‘#1’ not in range [0,1]}\@ehd
7   \fi}
```

---

\*Version v3.0m, revised 2016/06/17

Need to make sure of a trailing .0 for textures. Apparently it is OK to always add a . as 1.3. is accepted by textures. textures gray special is reversed, so just use rgb instead.

```

8 \def\color@gray#1#2{%
9 \c@lor@arg{#2}%
10 <color4> \c@lor@rgb@RGB\@tempa
11 <color1> \edef#1{gray #2}%
12 <color2> \edef#1{rgb #2. #2. #2.}%
13 <color3> \edef#1{#2 setgray}%
14 <color4> \edef#1{\@tempa\@tempa\@tempa}%
15 }
16 \def\color@cmyk#1#2{\c@lor@@cmyk#2\@@#1}
17 \def\c@lor@@cmyk#1,#2,#3,#4\@@#5{%
18 \c@lor@arg{#4}%
19 <color4> \dimen@ii#4\p@
20 \c@lor@arg{#1}%
21 <color4> \c@lor@cmyk@RGB\@tempa
22 \c@lor@arg{#2}%
23 <color4> \c@lor@cmyk@RGB\@tempb
24 \c@lor@arg{#3}%
25 <color4> \c@lor@cmyk@RGB\@tempc
26 <color1> \edef#5{cmyk #1 #2 #3 #4}%
27 <color2> \edef#5{cmyk #1. #2. #3. #4.}%
28 <color3> \edef#5{#1 #2 #3 #4 setcmykcolor}%
29 <color4> \edef#5{\@tempa\@tempb\@tempc}%
30 }

```

A 0–1 range value will have been left in \dimen@ by \c@lor@arg. The black value (0–1) will be stored in \dimen@ii. Covert to 0–255 integer, and leave in #1.

```

31 (*color4)
32 \def\c@lor@cmyk@RGB#1{%
33 \advance\dimen@-\p@
34 \advance\dimen@\dimen@ii
35 \dimen@-\@cc1v\dimen@
36 \divide\dimen@\p@
37 \count@\ifdim\dimen@<z@\z@\else\dimen@\fi
38 \edef#1{the\count@\space}}
39 </color4>
40 \def\color@rgb#1#2{\c@lor@@rgb#2\@@#1}
41 \def\c@lor@@rgb#1,#2,#3\@@#4{%
42 \c@lor@arg{#1}%
43 <color4> \c@lor@rgb@RGB\@tempa
44 \c@lor@arg{#2}%
45 <color4> \c@lor@rgb@RGB\@tempb
46 \c@lor@arg{#3}%
47 <color4> \c@lor@rgb@RGB\@tempc
48 <color1> \edef#4{rgb #1 #2 #3}%
49 <color2> \edef#4{rgb #1. #2. #3.}%
50 <color3> \edef#4{#1 #2 #3 setrgbcolor}%
51 <color4> \edef#4{\@tempa\@tempb\@tempc}%
52 }

```

A 0–1 range value will have been left in \dimen@ by \c@lor@arg. Convert to 0–255 integer, and leave in #1.

```

53 <*color4>
54 \def\color@rgb@RGB#1{%
55   \dimen@\cc@lv\dimen@
56   \count@\dimen@
57   \divide\count@\p@
58   \edef#1{\the\count@\space}}
59 </color4>
60 \def\color@RGB#1#2{\color@@RGB#2\@@#1}
61 \def\color@@RGB#1,#2,#3\@@#4{%
62 <!color4> \color@RGB@rgb{#1}\@tempa
63 <!color4> \color@RGB@rgb{#2}\@tempb
64 <!color4> \color@RGB@rgb{#3}\@tempc
65 <!color4> \color@rgb\@tempa,\@tempb,\@tempc\@@#4%
66 <color4> \edef#4{#1 #2 #3}%
67   }

```

Convert 0–255 integer, #1, to 0–1 real, and leave in #2.

```

68 <!*color4>
69 \def\color@RGB@rgb#1#2{%
70   \dimen@#1\p@
71   \divide\dimen@\cc@lv
72   \edef#2{\strip@pt\dimen@}}
73 </!color4>
74 <*color1 | color3>
75 \def\color@hsb#1#2{\color@@hsb#2\@@#1}
76 \def\color@@hsb#1,#2,#3\@@#4{%
77   \color@arg{#1}%
78   \color@arg{#2}%
79   \color@arg{#3}%
80 <color1> \edef#4{hsb #1 #2 #3}%
81 <color3> \edef#4{#1 #2 #3 sethsbcolor}%
82   }
83 </color1 | color3>
84 \def\color@named#1#2{\color@@named#2,,\@@#1}
85 \def\color@@named#1,#2,#3\@@#4{%
86   \ifundefined{col@#1}%
87     {\PackageError{color}{Undefined color ‘#1’}\@ehd}%
88 <color1&!dvipsone> {\edef#4{ #1}}%
89 <color2> {\edef#4{ #1 \if!#2!\else #2.\fi}}%
90 <color3 | dvipsone | color4> {\edef#4{\csname col@#1\endcsname}}%
91   }

```

Conversion from \special syntax to PostScript (for PSTricks).

```

92 <*color1 | color2>
93 \def\color@to@ps#1 #2\@@{\csname color@ps@#1\endcsname#2 \@@}
94 </color1 | color2>
95 <*color3>
96 \def\color@to@ps#1\@@{#1}
97 </color3>
98 <*color4>
99 \def\color@to@ps#1#2 #3 #4\@@{%
100 #1#2 255 div #3 255 div #4 255 div setrgbcolor}
101 </color4>

```

```

102 (*color1)
103 \def\color@ps@#1 #2\@{\TeXDict begin #1 end}
104 \def\color@ps@rgb#1\@{\#1 setrgbcolor}
105 \def\color@ps@hsb#1\@{\#1 sethsbcolor}
106 \def\color@ps@cmyk#1\@{\#1 setcmykcolor}
107 \def\color@ps@gray#1\@{\#1 setgray}
108 \color1}
109 (*color2)
110 \def\color@to@ps@#1 #2\@{\csname color@ps@#1\endcsname#2 \@}
111 \def\color@ps@#1 #2\@{\%
112   \expandafter\expandafter\expandafter
113     \color@to@ps@\csname col@#1\endcsname\space#2. \@{\#1}}
114 \def\color@ps@rgb#1. #2. #3. #4\@{\#1 #2 #3 setrgbcolor}
115 \def\color@ps@rgb#1. #2. #3. #4. #5\@{\#1 #2 #3 setrgbcolor}
116 \def\color@ps@cmyk#1. #2. #3. #4. #5. #6\@{\#1 #2 #3 #4 setcmykcolor}
117 \def\color@ps@cmyk#1. #2. #3. #4. #5. #6\@{\#7{\%
118   #1 #2 #3 #4 (#7) findcustomcmykcolor
119   \if!\@firstofone#5!1 \else#5 \fi setcustomcolor}
120 \color2}

121 \color1&!dvipsones)\def\current@color{ Black}
122 \color1 & dvipsones)\def\current@color{gray 0}
123 \color2)\def\current@color{rgb 0. 0. 0.}
124 \color3)\def\current@color{0 setgray}
125 \color4)\def\current@color{0 0 0}

126 (*color1)
127 \def\set@color{\%
128 (!dvipsones&!dvipdf) \special{color push \current@color
129 (dvipsones) \special{color push}\special{color \current@color
130 (dvipdf) \special{pdf: /C \current@color\space<<
131   }\aftergroup\reset@color}
132 \def\reset@color{\special{\%
133 (!dvipdf) color pop}}
134 (dvipdf) pdf: /C >> }}
135 \def\set@page@color{\special{\%
136 (!dvipdf) background \current@color}}
137 (dvipdf) pdf: /BG \current@color}}
138 \def\define@color@named#1#2{\%
139 (!dvipsones) \expandafter\let\csname col@#1\endcsname\@nnil}
140 (dvipsones) \expandafter\edef\csname col@#1\endcsname{\#2}}
141 (dvips) \def\no@page@color{\special{background \string"newpath clip}}
142 \color1}
143 (*color2)
144 \def\set@color{\%
145 \special{color push}\%
146 \special{color \current@color}}\%
147 \aftergroup\reset@color}
148 \def\reset@color{\special{color pop}}
149 \def\set@page@color{\color@special\sixt@@n{background \current@color}}
150 \def\define@color@named#1#2{\%
151 \AtBeginDvi{\special{color define #1 #2}}\%
152 \expandafter\edef\csname col@#1\endcsname{\#2}}
153 \color2}
154 (*color3)

```

```

155 \def\set@color{%
156   \Gin@PS@raw{\current@color}\aftergroup\reset@color}
157 \def\reset@color{\Gin@PS@raw{\current@color}}
158 \color3)
159 (*color4)
160 \def\set@color{%
161   \special{textcolor: \current@color}\aftergroup\reset@color}
162 \def\reset@color{\special{textcolor: \current@color}}
163 \color4)
164 (*color3 | color4)
165 \def\set@page@color{%
166   \c@lor@special\sixt@@n{background color ignored: \current@color}}
167 \def\define@color@named#1#2{%
168   \expandafter\edef\csname col@#1\endcsname{#2}}
169 \color3 | color4)
170 \color1 | color2 | color3 | color4)
171 (*colorfix)
172 \AtBeginDocument{%
173   \let\@ldc@l@r\color
174   \def\color{\if@inlabel\leavevmode\fi\@ldc@l@r}%
175   \let\@lduseb@x\usebox
176   \def\usebox#1{\@lduseb@x{#1}\set@color}}
177 \colorfix)
178 (*dvipsnames)
179 \DefineNamedColor{named}{GreenYellow} {cmyk}{0.15,0,0.69,0}
180 \DefineNamedColor{named}{Yellow} {cmyk}{0,0,1,0}
181 \DefineNamedColor{named}{Goldenrod} {cmyk}{0,0.10,0.84,0}
182 \DefineNamedColor{named}{Dandelion} {cmyk}{0,0.29,0.84,0}
183 \DefineNamedColor{named}{Apricot} {cmyk}{0,0.32,0.52,0}
184 \DefineNamedColor{named}{Peach} {cmyk}{0,0.50,0.70,0}
185 \DefineNamedColor{named}{Melon} {cmyk}{0,0.46,0.50,0}
186 \DefineNamedColor{named}{YellowOrange} {cmyk}{0,0.42,1,0}
187 \DefineNamedColor{named}{Orange} {cmyk}{0,0.61,0.87,0}
188 \DefineNamedColor{named}{BurntOrange} {cmyk}{0,0.51,1,0}
189 \DefineNamedColor{named}{Bittersweet} {cmyk}{0,0.75,1,0.24}
190 \DefineNamedColor{named}{RedOrange} {cmyk}{0,0.77,0.87,0}
191 \DefineNamedColor{named}{Mahogany} {cmyk}{0,0.85,0.87,0.35}
192 \DefineNamedColor{named}{Maroon} {cmyk}{0,0.87,0.68,0.32}
193 \DefineNamedColor{named}{BrickRed} {cmyk}{0,0.89,0.94,0.28}
194 \DefineNamedColor{named}{Red} {cmyk}{0,1,1,0}
195 \DefineNamedColor{named}{OrangeRed} {cmyk}{0,1,0.50,0}
196 \DefineNamedColor{named}{RubineRed} {cmyk}{0,1,0.13,0}
197 \DefineNamedColor{named}{WildStrawberry} {cmyk}{0,0.96,0.39,0}
198 \DefineNamedColor{named}{Salmon} {cmyk}{0,0.53,0.38,0}
199 \DefineNamedColor{named}{CarnationPink} {cmyk}{0,0.63,0,0}
200 \DefineNamedColor{named}{Magenta} {cmyk}{0,1,0,0}
201 \DefineNamedColor{named}{VioletRed} {cmyk}{0,0.81,0,0}
202 \DefineNamedColor{named}{Rhodamine} {cmyk}{0,0.82,0,0}
203 \DefineNamedColor{named}{Mulberry} {cmyk}{0.34,0.90,0,0.02}
204 \DefineNamedColor{named}{RedViolet} {cmyk}{0.07,0.90,0,0.34}
205 \DefineNamedColor{named}{Fuchsia} {cmyk}{0.47,0.91,0,0.08}
206 \DefineNamedColor{named}{Lavender} {cmyk}{0,0.48,0,0}
207 \DefineNamedColor{named}{Thistle} {cmyk}{0.12,0.59,0,0}

```

```

208 \DefineNamedColor{named}{Orchid}           {cmyk}{0.32,0.64,0,0}
209 \DefineNamedColor{named}{DarkOrchid}       {cmyk}{0.40,0.80,0.20,0}
210 \DefineNamedColor{named}{Purple}           {cmyk}{0.45,0.86,0,0}
211 \DefineNamedColor{named}{Plum}             {cmyk}{0.50,1,0,0}
212 \DefineNamedColor{named}{Violet}           {cmyk}{0.79,0.88,0,0}
213 \DefineNamedColor{named}{RoyalPurple}      {cmyk}{0.75,0.90,0,0}
214 \DefineNamedColor{named}{BlueViolet}       {cmyk}{0.86,0.91,0,0.04}
215 \DefineNamedColor{named}{Periwinkle}       {cmyk}{0.57,0.55,0,0}
216 \DefineNamedColor{named}{CadetBlue}        {cmyk}{0.62,0.57,0.23,0}
217 \DefineNamedColor{named}{CornflowerBlue}   {cmyk}{0.65,0.13,0,0}
218 \DefineNamedColor{named}{MidnightBlue}     {cmyk}{0.98,0.13,0,0.43}
219 \DefineNamedColor{named}{NavyBlue}         {cmyk}{0.94,0.54,0,0}
220 \DefineNamedColor{named}{RoyalBlue}        {cmyk}{1,0.50,0,0}
221 \DefineNamedColor{named}{Blue}             {cmyk}{1,1,0,0}
222 \DefineNamedColor{named}{Cerulean}         {cmyk}{0.94,0.11,0,0}
223 \DefineNamedColor{named}{Cyan}             {cmyk}{1,0,0,0}
224 \DefineNamedColor{named}{ProcessBlue}      {cmyk}{0.96,0,0,0}
225 \DefineNamedColor{named}{SkyBlue}          {cmyk}{0.62,0,0.12,0}
226 \DefineNamedColor{named}{Turquoise}        {cmyk}{0.85,0,0.20,0}
227 \DefineNamedColor{named}{TealBlue}         {cmyk}{0.86,0,0.34,0.02}
228 \DefineNamedColor{named}{Aquamarine}       {cmyk}{0.82,0,0.30,0}
229 \DefineNamedColor{named}{BlueGreen}        {cmyk}{0.85,0,0.33,0}
230 \DefineNamedColor{named}{Emerald}          {cmyk}{1,0,0.50,0}
231 \DefineNamedColor{named}{JungleGreen}      {cmyk}{0.99,0,0.52,0}
232 \DefineNamedColor{named}{SeaGreen}         {cmyk}{0.69,0,0.50,0}
233 \DefineNamedColor{named}{Green}            {cmyk}{1,0,1,0}
234 \DefineNamedColor{named}{ForestGreen}      {cmyk}{0.91,0,0.88,0.12}
235 \DefineNamedColor{named}{PineGreen}        {cmyk}{0.92,0,0.59,0.25}
236 \DefineNamedColor{named}{LimeGreen}        {cmyk}{0.50,0,1,0}
237 \DefineNamedColor{named}{YellowGreen}      {cmyk}{0.44,0,0.74,0}
238 \DefineNamedColor{named}{SpringGreen}      {cmyk}{0.26,0,0.76,0}
239 \DefineNamedColor{named}{OliveGreen}       {cmyk}{0.64,0,0.95,0.40}
240 \DefineNamedColor{named}{RawSienna}        {cmyk}{0,0.72,1,0.45}
241 \DefineNamedColor{named}{Sepia}            {cmyk}{0,0.83,1,0.70}
242 \DefineNamedColor{named}{Brown}            {cmyk}{0,0.81,1,0.60}
243 \DefineNamedColor{named}{Tan}              {cmyk}{0.14,0.42,0.56,0}
244 \DefineNamedColor{named}{Gray}             {cmyk}{0,0,0,0.50}
245 \DefineNamedColor{named}{Black}            {cmyk}{0,0,0,1}
246 \DefineNamedColor{named}{White}            {cmyk}{0,0,0,0}
247 </dvipsnames>

```

### 3 dvips

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for Tom Rokicki's *dvips* driver; tested with version 5.58f.

248 < \*dvips >

#### 3.1 Colour

Uses the generic 'color1' code.

### 3.2 File inclusion

```

\Gininclude@eps #1 input file (or command)
249 \def\Gininclude@eps#1{%
250 \message{<#1>}%
251 \bgroup

dvips likes to work with its own pixel resolution, so mangle the sizes slightly.
252 \def\@tempa{!}%
253 \dimen@\Gin@req@width
254 \dimen@ii.1bp%
255 \divide\dimen@\dimen@ii
256 \@tempdima\Gin@req@height
257 \divide\@tempdima\dimen@ii
258 \special{PSfile="#1"\space
259 llx=\Gin@llx\space
260 lly=\Gin@lly\space
261 urx=\Gin@urx\space
262 ury=\Gin@ury\space
263 \ifx\Gin@scalex\@tempa\else rwi=\number\dimen@\space\fi
264 \ifx\Gin@scaley\@tempa\else rhi=\number\@tempdima\space\fi
265 \ifGin@clip clip\fi}%
266 \egroup}

\Gininclude@bmp #1 input file; if zero size is requested, the graphic will come at ‘natural’ size.
267 \def\Gininclude@bmp#1{%
268 \message{<#1>}%
269 \dimen@\Gin@req@height
270 \advance\dimen@ by-\Gin@lly bp
271 \kern-\Gin@llx bp\raise\Gin@req@height\hbox{%
272 \ifdim\Gin@urx bp=\z@
273 \ifdim\Gin@ury bp=\z@
274 \special{em: graph #1}%
275 \else
276 \special{em: graph #1,\Gin@urx bp}%
277 \fi
278 \else
279 \special{em: graph #1,\Gin@urx bp,\Gin@ury bp}%
280 \fi
281 }%
282 }

\Gininclude@pict PICT/PNTG format from the Mac. Actually only currently supported by the
\Gininclude@pntg version of dvips distributed with OzTEX, and with the built in OzTEX drivers,
\oztex@include but put here anyway as it is not much code and increases portability between the
systems as now [dvips] and [oztex] share the same back end.
283 \def\oztex@include#1#2{%
284 \dimen@1bp%
285 \divide\Gin@req@width\dimen@
286 \divide\Gin@req@height\dimen@
287 \special{#1=#2\space
288 \@width=\number\Gin@req@width \space
289 \@height=\number\Gin@req@height}}

```

```

290 \def\Gininclude@pntg{\oztex@include{pntg}}
291 \def\Gininclude@pict{\oztex@include{pict}}

```

### 3.3 Rotation

```

292 \def\Grot@start{%
293 \special{ps: gsave currentpoint
294 currentpoint translate \Grot@angle\space neg
295 rotate neg exch neg exch translate}}
296 \def\Grot@end{\special{ps: currentpoint grestore moveto}}

```

### 3.4 Scaling

```

297 \def\Gscale@start{\special{ps: currentpoint currentpoint translate
298 \Gscale@x\space \Gscale@y\space scale neg exch neg exch translate}}
299 \def\Gscale@end{\special{ps: currentpoint currentpoint translate
300 1 \Gscale@x\space div 1 \Gscale@y\space div scale
301 neg exch neg exch translate}}

```

## 4 Literal Postscript

Raw PostScript code, no save/restore.

```
302 \def\Gin@PS@raw#1{\special{ps: #1}}
```

PostScript code, to be surrounded by save/restore by the driver. Coordinate system standard PostScript, but with origin at current (T<sub>E</sub>X) position.

```
303 \def\Gin@PS@restored#1{\special{" #1}}
```

PostScript code to be inserted in the Header section of the final PostScript. Must be issued on the first page of a document.

```
304 \def\Gin@PS@literal@header#1{\AtBeginDvi{\special{! #1}}}
```

Name of external file, the contents of which are to be inserted in the Header section of the final PostScript. Must be issued on the first page of a document.

```
305 \def\Gin@PS@file@header#1{\AtBeginDvi{\special{header=#1}}}
```

## 5 Page Size

```

306 \@ifundefined{ifGin@setpagesize}
307 {\expandafter\let\csname ifGin@setpagesize\expandafter\endcsname
308 \csname iftrue\endcsname}
309 {}

310 \ifGin@setpagesize
311 \ifx\paperwidth\@undefined\else
312 \AtBeginDocument{\AtBeginDvi{%
313 \begingroup
314 \ifx\stockwidth\@undefined\else
315 \paperwidth\stockwidth
316 \paperheight\stockheight
317 \fi
318 \ifdim\paperwidth>\z@
319 \ifdim\paperheight>\z@
320 \special{papersize=\the\paperwidth,\the\paperheight}%
321 \fi

```

```

322     \fi
323     \endgroup}}
324 \fi
325 \fi
326 </dvips>

```

## 6 dvipdf

A  $\text{\LaTeX}$  2 $\epsilon$  graphics driver file for *dvipdf* driver.

```
327 (*dvipdf)
```

### 6.1 Colour

Uses the generic ‘color1’ code.

### 6.2 File inclusion

`\Gininclude@eps` #1 input file (or command)

```

328 \def\Gininclude@eps#1{%
329   \message{<#1>}%
330   \bgroup
dvips likes to work with its own pixel resolution, so mangle the sizes slightly.
331   \def\@tempa{!}%
332   \dimen@\Gin@req@width
333   \dimen@ii.1bp%
334   \divide\dimen@\dimen@ii
335   \@tempdima\Gin@req@height
336   \divide\@tempdima\dimen@ii
337   \special{PSfile="#1"\space
338     llx=\Gin@llx\space
339     lly=\Gin@lly\space
340     urx=\Gin@urx\space
341     ury=\Gin@ury\space
342     \ifx\Gin@scalex\@tempa\else rwi=\number\dimen@\space\fi
343     \ifx\Gin@scaley\@tempa\else rhi=\number\@tempdima\space\fi
344     \ifGin@clip clip\fi}%
345   \egroup}

```

`\Gininclude@bmp` #1 input file; if zero size is requested, the graphic will come at ‘natural’ size.

```

346 \def\Gininclude@bmp#1{%
347   \message{<#1>}%
348   \dimen@\Gin@req@height
349   \advance\dimen@ by-\Gin@lly bp
350   \kern-\Gin@llx bp\raise\Gin@req@height\hbox{%
351     \ifdim\Gin@urx bp=\z@
352       \ifdim\Gin@ury bp=\z@
353         \special{pdf: /GRAPH #1}%
354       \else
355         \special{pdf: /GRAPH #1 \number\Gin@req@width sp}%
356       \fi
357     \else
358       \special{pdf: /GRAPH #1 \number\Gin@req@width sp

```

```
359 \number\Gin@req@height sp}%
360 \fi}}
```

### 6.3 Rotation

```
361 \def\Grot@start{%
362 \special{pdf: /ROT \Grot@angle\space << }}
363 \def\Grot@end{\special{pdf: /ROT >> }}
```

### 6.4 Scaling

```
364 \def\Gscale@start{\special{pdf: /S \Gscale@x\space \Gscale@y\space << }}
365 \def\Gscale@end{\special{pdf: /S \space >> }}
```

## 7 Literal Postscript

Raw PostScript code, no save/restore.

```
366 \def\Gin@PS@raw#1{\special{ps: #1}}
```

PostScript code, to be surrounded by save/restore by the driver. Coordinate system standard PostScript, but with origin at current (T<sub>E</sub>X) position.

```
367 \def\Gin@PS@restored#1{\special{" #1}}
```

PostScript code to be inserted in the Header section of the final PostScript. Must be issued on the first page of a document.

```
368 \def\Gin@PS@literal@header#1{\AtBeginDvi{\special{! #1}}}
```

Name of external file, the contents of which are to be inserted in the Header section of the final PostScript. Must be issued on the first page of a document.

```
369 \def\Gin@PS@file@header#1{\AtBeginDvi{\special{header=#1}}}
```

### 7.1 File extensions

```
370 \namedef{Gin@rule@.msp}#1{{bmp}{.bb}{#1}}
371 \namedef{Gin@rule@.jpg}#1{{bmp}{.bb}{#1}}
372 \namedef{Gin@rule@.bmp}#1{{bmp}{.bb}{#1}}
373 </dvi pdf>
```

## 8 OzT<sub>E</sub>X

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for OzT<sub>E</sub>X (versions 1.42 and later), by Andrew Trevorrow.

```
374 (*oztex)
```

### 8.1 Graphics inclusion

```
375 \def\Ginclude@eps{\Oztex@Include{epsf}}
376 \def\Ginclude@pntg{\Oztex@Include{pntg}}
377 \def\Ginclude@pict{\Oztex@Include{pict}}
378 \def\Oztex@Include#1#2{%
379 \ifGin@clip
380 \typeout{No clipping support in OzTeX}%
381 \fi
382 \divide\Gin@req@width by 65781% convert sp to bp
```

```

383 \divide\Gin@req@height by 65781%
384 \special{#1=#2\space
385 width=\number\Gin@req@width \space
386 height=\number\Gin@req@height
387 }%
388 }
389 </oztex>

```

## 9 Textures

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for Blue Sky's Textures

**WARNING! There is ongoing work to produce a new version of the textures support. Do not rely on anything in this file being in the next version!**

```
390 <*textures>
```

### 9.1 Graphics inclusion

```

391 \PackageInfo{graphics/color}
392 {This file uses the advanced color support\MessageBreak
393 available in textures1.7\MessageBreak
394 If you are using color with an earlier version\MessageBreak
395 of textures, edit graphics.ins where marked,\MessageBreak
396 and re-latex graphics.ins.\MessageBreak\MessageBreak
397 If you are using textures1.7\MessageBreak
398 you may want to delete this warning\MessageBreak
399 from textures.def.\MessageBreak\MessageBreak
400 The code for scaling/rotation and file inclusion\MessageBreak
401 in this file is still rudimentary, and does not\MessageBreak
402 use textures' full capabilities.\MessageBreak\MessageBreak
403 A new textures.def is currently being developed\@gobble}

404 \def\Gininclude@eps{\Textures@Include{illustration}}
405 \def\Gininclude@pict{\Textures@Include{pictfile}}
406 \def\Textures@Include#1#2{%
407 \def\@tempa{!}%
408 \ifx\Gin@scaley\@tempa
409 \let\Gin@scaley\Gin@scalex
410 \else
411 \ifx\Gin@scalex\@tempa\let\Gin@scalex\Gin@scaley\fi
412 \fi
413 \setlength\@tempdima{\Gin@scalex pt}%
414 \setlength\@tempdimb{\Gin@scaley pt}%
415 \ifdim\@tempdima>\@tempdimb
416 \let\Gin@scalex\Gin@scaley
417 \fi
418 \ifGin@clip
419 \typeout{no clipping support in Textures}%
420 \fi
421 \@tempdimb=1000sp%
422 \setlength\@tempdima{\Gin@scalex\@tempdimb}%
423 \special{#1 #2\space scaled \number\@tempdima}%
424 }

```

## 9.2 Rotation

This code was written when no unprotected postscript code was allowed; it could almost certainly be rewritten now with ‘rawpostscript’.

```
425 \def\Grot@start{\special{postscript
426   0 0 transform
427   grestore
428   matrix currentmatrix
429   3 1 roll
430   itransform
431   dup 3 -1 roll
432   dup 4 1 roll exch
433   translate
434   \Grot@angle\space neg rotate
435   neg exch neg exch translate
436   gsave}}
437 \def\Grot@end{\special{postscript grestore setmatrix gsave}}
```

## 9.3 Colour

This will only work for versions 1.6 and Version 1.7 uses ‘color2’.

```
438 <color3>\def\Gin@PS@raw#1{\special{rawpostscript #1}}
439 </textures>
```

## 10 dvia1w

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for dvia1w, by Nelson Beebe

```
440 <*dvia1w>
```

### 10.1 Rotation

```
441 \def\Gin@include@eps#1{%
442   \def@tempa{!}%
443   \ifx\Gin@scaley@tempa
444     \let\Gin@scaley\Gin@scalex
445   \else
446     \ifx\Gin@scalex@tempa\let\Gin@scalex\Gin@scaley\fi
447   \fi
448   \ifGin@clip
449     \typeout{no clipping support in dvia1w}%
450   \fi
451   \special{language "PS",
452     literal "\Gin@scalex\space
453       \Gin@scaley\space scale",
454     position = "bottom left",
455     include "#1\space"}%
456 }
457 </dvia1w>
```

## 11 emtex

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for Eberhard Mattes’ emTeX

```
458 (*emtex)
```

## 11.1 Graphics file inclusion

```
459 \def\Gininclude@bmp#1{%
460   \raise\Gin@req@height\hbox{\special{em:graph #1}}%
461   \typeout{WARNING: emtex does not permit graphics to be scaled}%
462 }
463 </emtex>
```

## 12 dvlaser/ps

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for Arbortext's dvlaser/ps

```
464 (*dvlaser)
```

### 12.1 Graphic file inclusion

```
465 \def\Gininclude@eps#1{%
466   \ifGin@clip
467   \typeout{no clipping support in dvlaser/ps}%
468   \fi
469   \special{ps: epsfile #1\space \the\Gin@req@width}%
470 }
471 </dvlaser>
```

## 13 psprint

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for Trevorrow's psprint

```
472 (*psprint)
```

### 13.1 Graphic file inclusion

```
473 \def\Gininclude@eps#1{%
474   \def@tempa{!}%
475   \ifx\Gin@scaley\@tempa
476     \let\Gin@scaley\Gin@scalex
477   \else
478     \ifx\Gin@scalex\@tempa\let\Gin@scalex\Gin@scaley\fi
479   \fi
480   \ifGin@clip
481     \typeout{no clipping support in psprint}%
482   \fi
483   \special{#1\space
484     \Gin@scalex\space \Gin@scaley\space scale
485     \Gin@llx\space neg
486     \Gin@lly \space neg translate
487 }%
488 }
489 </psprint>
```

## 14 dvipsone

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for Y&Y's dvipsone

```
490 (*dvipsone)
```

## 14.1 Graphic file inclusion

PostScript Files.

```
491 \def\Gininclude@eps#1{%
492 \message{<#1>}%
493 \bgroup
494 \def\@tempa{!}%
495 \dimen@\Gin@req@width
496 \dimen@ii.1bp%
497 \divide\dimen@\dimen@ii
498 \@tempdima\Gin@req@height
499 \divide\@tempdima\dimen@ii
500 \special{PSfile="#1"\space
501 llx=\Gin@llx\space
502 lly=\Gin@lly\space
503 urx=\Gin@urx\space
504 ury=\Gin@ury\space
505 \ifx\Gin@scalex\@tempa\else rwi=\number\dimen@\space\fi
506 \ifx\Gin@scaley\@tempa\else rhi=\number\@tempdima\space\fi
507 \ifGin@clip clip\fi}%
508 \egroup}
```

Tiff files.

```
509 \def\Gininclude@tiff#1{%
510 \message{<#1>}%
511 \special{insertimage: #1 \number\Gin@req@width\space
512 \number\Gin@req@height}}
```

Windows Metafiles.

```
513 \def\Gininclude@wmf#1{%
514 \message{<#1>}%
515 \special{insertmf: #1 0 0 \number\Gin@req@width\space
516 \number\Gin@req@height}}

517 \def\Gin@PS@raw#1{\special{ps: #1}}
```

## 14.2 Rotation

```
518 \def\Grot@start{%
519 \special{ps: gsave currentpoint
520 currentpoint translate \Grot@angle\space
521 rotate neg exch neg exch translate}}
522 \def\Grot@end{%
523 \special{ps: currentfont currentpoint grestore moveto setfont}}
```

## 14.3 Scaling

```
524 \def\Gscale@start{\special{ps: currentpoint currentpoint translate
525 \Gscale@x\space \Gscale@y\space scale neg exch neg exch translate}}
526 \def\Gscale@end{\special{ps: currentpoint currentpoint translate
527 1 \Gscale@x\space div 1 \Gscale@y\space div scale
528 neg exch neg exch translate}}
```

## 14.4 File Extensions

```
529 \@namedef{Gin@rule@.wmf}#1{{wmf}}{#1}}
```

```
530 \@namedef{Gin@rule@.clp}#1{{wmf}}{#1}}
```

## 15 Literal Postscript

Raw PostScript code, no save/restore.

```
531 \def\Gin@PS@raw#1{\special{ps: #1}}
```

PostScript code, to be surrounded by save/restore by the driver. Coordinate system standard PostScript, but with origin at current (T<sub>E</sub>X) position.

```
532 \def\Gin@PS@restored#1{\special{" #1}}
```

PostScript code to be inserted in the Header section of the final PostScript. Must be issued on the first page of a document.

```
533 \def\Gin@PS@literal@header#1{\AtBeginDvi{\special{headertext=#1}}}
```

Name of external file, the contents of which are to be inserted in the Header section of the final PostScript. Must be issued on the first page of a document.

```
534 \def\Gin@PS@file@header#1{\AtBeginDvi{\special{header=#1}}}
```

```
535 </dvipsone>
```

## 16 dviwindo

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for Y&Y's dviwindo.

This driver now uses the same file as dvipsone.

## 17 dvitops

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for James Clark's dvitops

```
536 < *dvitops >
```

### 17.1 Rotation

```
537 \newcount\Grot@count
```

```
538 \Grot@count=\@ne
```

```
539 \def\Grot@start{\special{dvitops: origin
```

```
540   rot\the\@tempdima}%
```

```
541 \special{dvitops: begin rot\the\Grot@count}}%
```

```
542 \def\Grot@end{\special{dvitops: end}}%
```

```
543 \special{dvitops: rotate rot\the\Grot@count \space
```

```
544   \Grot@angle}%
```

```
545 \global\advance\Grot@count by\@ne}%
```

### 17.2 Graphic file inclusion

```
546 \def\Gin@include@eps#1{%
```

```
547 % These cause an arithmetic overflow, so I've commented them
```

```
548 % out. Presumably they were there for some reason.
```

```
549 % Any dvitops users out there??
```

```
550 % \multiply\Gin@req@width by \@m
```

```
551 % \multiply\Gin@req@height by \@m
```

```
552 \ifGin@clip
```

```
553 \typeout{no clipping support in dvitops}}%
```

```

554 \fi
555 \special{import #1\space \the\Gin@req@width\space
556 \the\Gin@req@height\space fill}}
557 </dvitops>

```

## 18 dvi2ps

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for original dvi2ps  
558 < \*dvi2ps >

### 18.1 Graphic file inclusion

```

559 \def\Gininclude@eps#1{%
560 \def\@tempa{!}%
561 \ifx\Gin@scaley\@tempa
562 \let\Gin@scaley\Gin@scalex
563 \else
564 \ifx\Gin@scalex\@tempa\let\Gin@scalex\Gin@scaley\fi
565 \fi
566 \ifGin@clip
567 \typeout{no clipping support in dvi2ps}%
568 \fi
569 \special{psfile=#1\space
570 hscale=\Gin@scalex\space 1000 mul
571 vscale=\Gin@scaley\space 1000 mul}}
572 </dvi2ps>

```

## 19 pctexps

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for Personal TeX's PTI Laser/PS; from information  
supplied by Lance Carnes and Tao Wang <pti@crl.com>.  
573 < \*pctexps >

### 19.1 Graphic file inclusion

```

574 \def\Gininclude@eps#1{%
575 \message{<#1>}%
576 \ifGin@clip
577 \typeout{no clipping support in pctexps}%
578 \fi
579 \Gin@req@width.03515\Gin@req@width
580 \Gin@req@height.03515\Gin@req@height
581 \special{ps:#1\space x=\strip@pt\Gin@req@width cm,
582 y=\strip@pt\Gin@req@height cm}}

583 \def\Gininclude@ps#1{%
584 \message{<#1>}%
585 \ifGin@clip
586 \typeout{no clipping support in pctexps}%
587 \fi
588 \hbox{\kern-\Gin@llx bp\raise-\Gin@lly bp\hbox{\special{ps:#1}}}%
589 \typeout{^^J%
590 -----^^J%

```

```

591 .ps graphics without bounding box information cannot be^^J%
592 scaled. If the file actually contains the information,^^J%
593 please rename the file to .eps file extension.^^J%
594 -----^^J}}

595 \def\Gin@extensions{.eps,.ps}
596 \@namedef{Gin@rule@.ps}#1{{ps}{.ps}{#1}}
597 \@namedef{Gin@rule@.eps}#1{{eps}{.eps}{#1}}

598 \def\Gin@PS@raw#1{\special{ps:#1}}
599 \def\Grot@start{%
600 \special{ps::gsave currentpoint
601 currentpoint translate \Grot@angle\space
602 rotate neg exch neg exch translate}}
603 \def\Grot@end{\special{ps:: currentpoint grestore moveto}}

604 \def\Gscale@start{\special{ps:: currentpoint currentpoint translate
605 \Gscale@x\space \Gscale@y\space scale neg exch neg exch translate}}
606 \def\Gscale@end{\special{ps:: currentpoint currentpoint translate
607 1 \Gscale@x\space div 1 \Gscale@y\space div scale
608 neg exch neg exch translate}}

609 </pctexps>

```

## 20 pctex32

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for Personal TeX's PC TeX for 32 bit Windows;  
Code supplied by Tao Wang <pti@crl.com>.

### 20.1 Colour

Uses the generic 'color1' code.

```
610 <{*pctex32}
```

### 20.2 Graphic file inclusion

```

611 % including PostScript graphics
612 \def\Gin@include@eps#1{%
613 \message{<#1>}%
614 \bgroup
615 \def\@tempa{!}%
616 \dimen@{Gin@req@width
617 \dimen@ii.1bp%
618 \divide\dimen@{\dimen@ii
619 \@tempdima\Gin@req@height
620 \divide\@tempdima\dimen@ii
621 \special{PSfile="#1"\space
622 llx=\Gin@llx\space
623 lly=\Gin@lly\space
624 urx=\Gin@urx\space
625 ury=\Gin@ury\space
626 \ifx\Gin@scalex\@tempa\else rwi=\number\dimen@\space\fi
627 \ifx\Gin@scaley\@tempa\else rhi=\number\@tempdima\space\fi
628 \ifGin@clip clip\fi}%
629 \egroup}

```

```

        including BMP graphics
630 \def\Gininclude@bmp#1{%
631 \message{<#1>}%
632 \ifGin@clip
633 \typeout{no clipping support for BMP graphics in PCTeX32}%
634 \fi
635 \Gin@req@width.03515\Gin@req@width
636 \Gin@req@height.03515\Gin@req@height
637 \special{bmp:#1\space x=\strip@pt\Gin@req@width cm,
638 y=\strip@pt\Gin@req@height cm}}

        including WMF graphics
639 \def\Gininclude@wmf#1{%
640 \message{<#1>}%
641 \ifGin@clip
642 \typeout{no clipping support for WMF graphics in PCTeX32}%
643 \fi
644 \Gin@req@width.03515\Gin@req@width
645 \Gin@req@height.03515\Gin@req@height
646 \special{wmf:#1\space x=\strip@pt\Gin@req@width cm,
647 y=\strip@pt\Gin@req@height cm}}

```

## 20.3 Scaling and Rotating

PostScript rotation and scaling

```

648 \def\Grot@start{%
649 \special{ps:: gsave currentpoint
650 currentpoint translate \Grot@angle\space neg
651 rotate neg exch neg exch translate}}
652 \def\Grot@end{\special{ps:: currentpoint grestore moveto}}
653 \def\Gscale@start{\special{ps:: currentpoint currentpoint translate
654 \Gscale@x\space \Gscale@y\space scale neg exch neg exch translate}}
655 \def\Gscale@end{\special{ps:: currentpoint currentpoint translate
656 1 \Gscale@x\space div 1 \Gscale@y\space div scale
657 neg exch neg exch translate}}

658 \def\Gin@PS@raw#1{\special{ps:: #1}}
659 \def\Gin@PS@restored#1{\special{" #1}}

```

## 20.4 Default Extensions

```

660 \def\Gin@extensions{.eps,.ps,.wmf,.bmp}
661 \@namedef{Gin@rule@.ps}#1{{eps}{.ps}{#1}}
662 \@namedef{Gin@rule@.eps}#1{{eps}{.eps}{#1}}
663 \@namedef{Gin@rule@.bmp}#1{{bmp}{.bmp}{#1}}
664 \@namedef{Gin@rule@.wmf}#1{{wmf}{.wmf}{#1}}

665 </pctex32>

```

## 21 pctexwin

A  $\LaTeX$  2<sub>ε</sub> graphics driver file for Personal TeX's PC TeX for Windows; from information supplied by Lance Carnes and Tao Wang <pti@crl.com>.

```
666 <*pctexwin>
```

## 21.1 Graphic file inclusion

```
667 \def\Gininclude@eps#1{%
668 \message{<#1>}%
669 \ifGin@clip
670 \typeout{no clipping support in pTeXwin}%
671 \fi
672 \Gin@req@width.03515\Gin@req@width
673 \Gin@req@height.03515\Gin@req@height
674 \special{eps:#1\space x=\strip@pt\Gin@req@width cm,
675 y=\strip@pt\Gin@req@height cm}}

676 \def\Gininclude@ps#1{%
677 \message{<#1>}%
678 \ifGin@clip
679 \typeout{no clipping support in pTeXwin}%
680 \fi
681 \hbox{\kern-\Gin@llx bp\raise-\Gin@lly bp\hbox{\special{ps:#1}}}%
682 \typeout{^^J%
683 -----^^J%
684 .ps graphics without bounding box information cannot be^^J%
685 scaled. If the file actually contains the information,^^J%
686 please rename the file to .eps file extension.^^J%
687 -----^^J%
688 }}

689 \def\Gininclude@bmp#1{%
690 \message{<#1>}%
691 \ifGin@clip
692 \typeout{no clipping support in pTeXwin}%
693 \fi
694 \Gin@req@width.03515\Gin@req@width
695 \Gin@req@height.03515\Gin@req@height
696 \special{bmp:#1\space x=\strip@pt\Gin@req@width cm,
697 y=\strip@pt\Gin@req@height cm}}

698 \def\Gininclude@wmf#1{%
699 \message{<#1>}%
700 \ifGin@clip
701 \typeout{no clipping support in pTeXwin}%
702 \fi
703 \Gin@req@width.03515\Gin@req@width
704 \Gin@req@height.03515\Gin@req@height
705 \special{wmf:#1\space x=\strip@pt\Gin@req@width cm,
706 y=\strip@pt\Gin@req@height cm}}

707 \def\Gin@extensions{.eps,.ps,.wmf,.bmp}
708 \@namedef{Gin@rule@.bmp}#1{{bmp}}{#1}}
709 \@namedef{Gin@rule@.wmf}#1{{wmf}}{#1}}
710 \@namedef{Gin@rule@.ps}#1{{ps}}{.ps}{#1}}
711 \@namedef{Gin@rule@.eps}#1{{eps}}{.eps}{#1}}
712 </pTeXwin>
```

## 22 pTeXhp

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for Personal TeX's PTI Laser/HP; from information supplied by Lance Carnes and Tao Wang <pti@crl.com>.

713 `(*pctexhp)`

## 22.1 Graphic file inclusion

```
714 \def\Gininclude@pcl#1{%
715 \message{<#1>}%
716 \ifGin@clip
717 \typeout{no clipping support in pctexhp}%
718 \fi
719 \hbox{\kern-\Gin@llx bp\raise-\Gin@lly bp\hbox{\special{pcl:#1}}}%
720 \typeout{WARNING: pctexhp does not permit graphics to be scaled}}
721 \@namedef{Gin@rule@.pcl}#1{{pcl}}{#1}}
722 \def\Gin@extensions{.pcl}
723 /pctexhp)
```

## 23 pubps

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for Arbortext’s PUBps; information from Peter R Wilson `pwilson@rdrc.rpi.edu`.

724 `(*pubps)`

### 23.1 Rotation

```
725 \def\Grot@start{\special{ps: gsave currentpoint
726 currentpoint translate \Grot@angle\space
727 rotate neg exch neg exch translate}}
728 \def\Grot@end{\special{ps: currentpoint grestore moveto}}
729 /pubps)
```

## 24 dviwin

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for Hippocrates Sendoukas’ dviwin

730 `(*dviwin)`

### 24.1 Graphic file inclusion

Dviwin sorts out the graphics type itself based on extension. They all use the same `\special`, so as far as `graphics.sty` is concerned they are all the same ‘type’. Use ‘bmp’ for the type as that is as good a name as any. Make this the default.

```
731 \@namedef{Gin@rule@*}#1{{bmp}}{#1}}
732 \def\Gininclude@bmp#1{%
733 \raise\Gin@req@height\hbox{%
734 \special{anisoscale #1,
735 \the\Gin@req@width\space \the\Gin@req@height}}}
```

The only exception is EPS files, as they may be read for BoundingBox

```
736 \@namedef{Gin@rule@.ps}#1{{eps}}{.ps}{#1}}
737 \@namedef{Gin@rule@.eps}#1{{eps}}{.eps}{#1}}
738 \let\Gininclude@eps\Gininclude@bmp
```

Add a few default extensions so `\includegraphics{a}` will pick up `a.eps` or `a.wmf`. This list can be reset with `\DeclareGraphicsExtensions`. Other extensions not in the list may be used explicitly, eg `\includegraphics{a.gif}`

should work as long as dviwin has access to a gif filter. If .gif is added using `\DeclareGraphicsExtensions` then `\includegraphics{a}` would also find `a.gif`.

```
739 \def\Gin@extensions{.eps,.ps,.wmf,.tif}
740 \</dviwin>
```

## 25 ln

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for B Hamilton Kelly’s ln03 driver. Untested, but based on the graphics macros distributed with the driver.

```
741 \<*/ln>
```

### 25.1 Graphic file inclusion

```
742 \def\Gininclude@sixel#1{\special{ln03:sixel #1}}
743 \</ln>
```

## 26 truetex

A L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> graphics driver file for Kinch ‘truetex’ driver.

```
744 \<*/truetex>
```

### 26.1 Colour

Uses the ‘color4’ colour code.

### 26.2 Graphic file inclusion

EPS File inclusion: DVIPS style.

```
745 \def\Gininclude@eps#1{%
746 \message{<#1>}%
747 \bgroup
748 \def\@tempa{!}%
749 \dimen@\Gin@req@width
750 \dimen@ii.1bp%
751 \divide\dimen@\dimen@ii
752 \@tempdima\Gin@req@height
753 \divide\@tempdima\dimen@ii
754 \special{PSfile="#1"\space
755 llx=\Gin@llx\space
756 lly=\Gin@lly\space
757 urx=\Gin@urx\space
758 ury=\Gin@ury\space
759 \ifx\Gin@scalex\@tempa\else rwi=\number\dimen@\space\fi
760 \ifx\Gin@scaley\@tempa\else rhi=\number\@tempdima\space\fi
761 \ifGin@clip clip\fi}%
762 \egroup}
```

bmp File Inclusion.

```
763 \def\Gininclude@bmp#1{%
764 \message{<#1>}%
765 \special{bmpfile #1}}
```

tif(f) File inclusion

```
766 \def\Gininclude@tiff#1{%
767 \message{<#1>}%
768 \special{tiff file #1}}
```

## 26.3 Literal PostScript

This is not supported, so uses ‘nops’ code.

## 26.4 Default Rules

Support (e)ps, tif and bmp, default to eps.

```
769 \def\Gin@extensions{.eps,.ps}
770 \namedef{Gin@rule@.ps}#1{{eps}{.ps}{#1}}
771 \namedef{Gin@rule@.eps}#1{{eps}{.eps}{#1}}
772 \namedef{Gin@rule@.tif}#1{{tiff}{}}{#1}}
773 \namedef{Gin@rule@.bmp}#1{{bmp}{}}{#1}}
774 \namedef{Gin@rule@*}#1{{eps}{\Gin@ext}}{#1}}
775 \truetex
```

## 27 tcidvi

A L<sup>A</sup>T<sub>E</sub>X<sub>2 $\epsilon$</sub>  graphics driver file for Scientific Word/Workplace. Actually for the Kinch truetex driver, augmented with extra \special handling with the DLL supplied with SW.

```
776 \*tcidvi
```

### 27.1 Colour

Uses the ‘color4’ colour code.

The above colours are handled by the Kinch-supplied dll The TCI dll adds support for \colorbox, but only grey scale The code below accepts any color model, but only the red component is used.

```
777 \AtBeginDocument{\def\color@block#1#2#3{%
778  {\rlap{\ifcolors@
779     \@defaultunits\count@\current@color\@nnil
780     \dimen@\count@\p@
781     \divide\dimen@\@ccclv
782     \dimen@ii#2%
783     \advance\dimen@ii#3%
784     \lower#3\hbox{%
785     \special{language "Scientific Word";%
786         type "greybox";%
787         greyscale \strip@pt\dimen@;%
788         height \the\dimen@ii;%
789         width \the#1;%
790         depth 0pt;}}%
791     \fi}}}
```

## 27.2 Graphic file inclusion

EPS File inclusion.

```
792 \def\Gininclude@eps#1{%  
793 \message{<#1>}%  
794 \raise\Gin@req@height\hbox{%
```

If the bounding box has been changed by a trim or viewport key then need to calculate the crop ratios based on the original bb coordinates. (This assumes that clip key is also used).

```
795 \ifx\Gin@ollx\undefined  
796 \else  
797 \@tempdimb \Gin@ourx bp%  
798 \advance\@tempdimb-\Gin@ollx bp%  
799 \@tempdima\Gin@llx bp%  
800 \advance\@tempdima-\Gin@ollx bp%  
801 \Gscale@div\TCI@cropleft\@tempdima\@tempdimb  
802 \@tempdima\Gin@urx bp%  
803 \advance\@tempdima-\Gin@ollx bp%  
804 \Gscale@div\TCI@cropright\@tempdima\@tempdimb  
805 \@tempdimb \Gin@oury bp%  
806 \advance\@tempdimb-\Gin@olly bp%  
807 \@tempdima\Gin@lly bp%  
808 \advance\@tempdima-\Gin@olly bp%  
809 \Gscale@div\TCI@cropbottom\@tempdima\@tempdimb  
810 \@tempdima\Gin@ury bp%  
811 \advance\@tempdima-\Gin@olly bp%  
812 \Gscale@div\TCI@croptop\@tempdima\@tempdimb  
813 \fi  
  
814 \special{%  
815 language \TCI@language;%  
816 type \TCI@type;%  
817 valid_file \TCI@validfile;%  
818 width \the\Gin@req@width;%  
819 height \the\Gin@req@height;%  
820 depth Opt;%  
821 original-width \the\Gin@nat@width;%  
822 original-height \the\Gin@nat@height;%  
823 cropleft "\TCI@cropleft";%  
824 croptop "\TCI@croptop";%  
825 cropright "\TCI@cropright";%  
826 cropbottom "\TCI@cropbottom";%  
827 filename '#1';%  
828 \ifx\TCI@temp@empty\else tempfilename \TCI@temp;\fi  
829 }}}}
```

Default values so documents produced elsewhere should work

```
830 \def\TCI@language{"Scientific Word"}  
831 \def\TCI@type{"GRAPHIC"}  
832 \def\TCI@validfile{'F'}  
833 \def\TCI@cropleft{0}  
834 \def\TCI@croptop{1}  
835 \def\TCI@cropright{1}  
836 \def\TCI@cropbottom{0}  
837 \let\TCI@temp@empty
```

Non PS Graphic files.

File inclusion macro is always the same. Use a different name though as LaTeX thinks it can read eps files for BoundingBox.

```
838 \let\Gininclude@bmp\Gininclude@eps
```

## 27.3 Literal PostScript

This is not supported, so uses ‘nops’ code.

## 27.4 Default Rules

SW always gives the full name with extension. So leave this list empty.

```
839 \def\Gin@extensions{}
```

.ps .PS .eps .EPS are (E)PS rest are ‘bmp’ which is a catch all type for anything that the import filter can handle.

```
840 \@namedef{Gin@rule@.ps}#1{{eps}{.ps}{#1}}
```

```
841 \@namedef{Gin@rule@.eps}#1{{eps}{.eps}{#1}}
```

```
842 \@namedef{Gin@rule@.PS}#1{{eps}{.PS}{#1}}
```

```
843 \@namedef{Gin@rule@.EPS}#1{{eps}{.EPS}{#1}}
```

```
844 \@namedef{Gin@rule@*}#1{{bmp}{\Gin@ext}{#1}}
```

```
845 \</tcidvi>
```

## 28 Literal Postscript

Most drivers writing to PostScript allow some form of ‘literal’ PostScript `\special` that inserts code into the final PostScript output. However Non-PS drivers can not support this (and some PS one’s can’t either). The code here makes all these commands no ops. Individual driver sections may define the commands to do something useful.

```
846 \<*nops>
```

Raw PostScript code, no save/restore. Coordinate system unspecified.

```
847 \def\Gin@PS@raw#1{}
```

PostScript code, to be surrounded by save/restore by the driver. Coordinate system standard PostScript, but with origin at current (TeX) position.

```
848 \def\Gin@PS@restored#1{}
```

PostScript code to be inserted in the Header section of the final PostScript. Must be issued on the first page of a document.

```
849 \def\Gin@PS@literal@header#1{}
```

Name of external file, the contents of which are to be inserted in the Header section of the final PostScript. Must be issued on the first page of a document.

```
850 \def\Gin@PS@file@header#1{}
```

```
851 \</nops>
```

## 29 Graphics Inclusion Rules

```
852 (*psrules)
853 \def\Gin@extensions{.eps,.ps}
854 \@namedef{Gin@rule@.ps}#1{{eps}}{.ps}{#1}}
855 \@namedef{Gin@rule@.eps}#1{{eps}}{.eps}{#1}}
856 \@namedef{Gin@rule@*}#1{{eps}}{\Gin@ext}{#1}}
857 \psrules)
858 (*psrulesZ)
859 \def\Gin@extensions{.eps,.ps,.eps.gz,.ps.gz,.eps.Z,.mps}
860 \@namedef{Gin@rule@.ps}#1{{eps}}{.ps}{#1}}
861 \@namedef{Gin@rule@.eps}#1{{eps}}{.eps}{#1}}
862 \@namedef{Gin@rule@.mps}#1{{eps}}{.mps}{#1}}
863 \@namedef{Gin@rule@.pz}#1{{eps}}{.bb}{#1}}
864 \@namedef{Gin@rule@.eps.Z}#1{{eps}}{.eps.bb}{#1}}
865 \@namedef{Gin@rule@.ps.Z}#1{{eps}}{.ps.bb}{#1}}
866 \@namedef{Gin@rule@.ps.gz}#1{{eps}}{.ps.bb}{#1}}
867 \@namedef{Gin@rule@.eps.gz}#1{{eps}}{.eps.bb}{#1}}
868 \@namedef{Gin@rule@*}#1{{eps}}{\Gin@ext}{#1}}
869 \psrulesZ)
870 (*dosrules)
871 (!psrulesZ)\def\Gin@extensions{.eps,.ps,.pcx,.bmp}
872 \@namedef{Gin@rule@.pcx}#1{{bmp}}{#1}}
873 \@namedef{Gin@rule@.bmp}#1{{bmp}}{#1}}
874 \@namedef{Gin@rule@.msp}#1{{bmp}}{#1}}
875 \dosrules)
876 (*macrules)
877 %\def\Gin@extensions{{},.ps,.eps,.pict}
878 %\@namedef{Gin@rule@.ps}#1{{eps}}{.ps}{#1}}
879 %\@namedef{Gin@rule@.eps}#1{{eps}}{.eps}{#1}}
880 \@namedef{Gin@rule@.pict}#1{{pict}}{#1}}
881 \@namedef{Gin@rule@.pntg}#1{{pntg}}{#1}}
882 %\@namedef{Gin@rule@}#1{{pict}}{\relax}{#1}}
883 \macrules)
884 (*tiffrules)
885 \@namedef{Gin@rule@.tif}#1{{tiff}}{#1}}
886 \tiffrules)
```