

# ViewDraw File Formats

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Stuarts Home Page Salkow's Home Page

## Introduction and purpose of document.

ViewDraw stores information about schematics and symbols as ASCII text files. An example symbol and the associated symbol file (ascii text) is shown below.

```
V 51
K 241039803300 example
|R 21:19_1-29-04
Y 0
D 0 0 240 190
Z 10
i 7

| Properties
U 0 -75 15 0 3 1 PKG_TYPE=TBD
U 0 -60 15 0 3 1 LEVEL=STD
U 0 -45 15 0 3 1 PARTS=1
U 0 -30 15 0 3 1 REFDES=U?
U 0 -15 15 0 3 1 DEVICE=EXAMPLE

| P is a pin
P 3 110 190 110 160 0 0 0

|A is an attribute
A 117 175 15 5 2 0 PINTYPE=ANALOG
A 111 184 15 6 9 3 #=3

|L is a Label
L 110 160 15 5 2 0 1 0 VCC

P 4 240 130 210 130 0 3 0
A 210 140 15 0 2 0 PINTYPE=BI
A 210 130 15 0 3 3 #=5
L 210 130 15 0 8 0 1 0 OUT1

P 5 240 110 210 110 0 3 0
A 210 120 15 0 2 0 PINTYPE=OUT
A 210 110 15 0 3 3 #=6
L 210 110 15 0 8 0 1 0 ERROR

P 6 110 0 110 30 0 1 0
A 117 30 15 1 2 0 PINTYPE=ANALOG
A 94 30 15 2 9 3 #=4
L 110 30 15 1 2 1 1 0 GND

P 2 0 110 30 110 0 2 0
A 45 117 15 0 2 0 PINTYPE=IN
A 22 110 15 0 9 3 #=2
L 30 110 15 0 2 0 1 0 IN2

P 1 0 130 30 130 0 2 1
A 45 137 15 0 2 0 PINTYPE=IN
A 23 130 15 0 9 3 #=1
L 30 130 15 0 2 0 1 0 IN1

|B is a box shape
b 28 30 210 163

|E is end of file
E
```

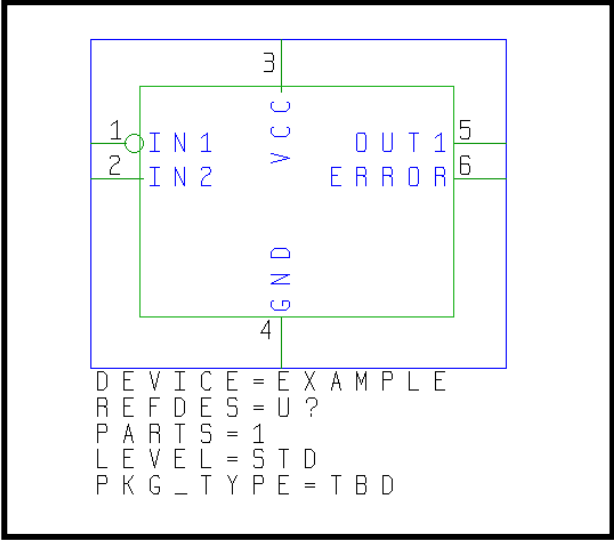
V Version Line  
K related to License and Version  
comment line begin like this one  
Y is Symbol type.  
D is the size of the symbol block.  
Z Sheet size., z is User defined size  
I Unknown

U xpos ypos text\_size rotation text\_pos scope attribute

P - A PIN  
P xpos ypos text\_size rotation text\_pos scope attribute

A is an attribute xpos ypos text\_size rotation text\_pos visibility attribute

L xpos ypos text\_size rotation text\_pos scope visibility logic\_sense text\_label



As is evident, ViewDraw stores information in a line-oriented fashion. The beginning of each line declares the item it will describe, and the remainder of the line carries the attributes of the item.

This document attempts to capture the meaning of the lines in the ViewDraw files so that people may write scripts to manipulate the file using e.g. Perl scripts. Innoveda refuses to give out this information since it regards it as "proprietary". Therefore, to discover the format of the file Stuart Brorson spent a couple of hours experimenting:

Stuart Brorson made changes in the symbol file and observed the effect in ViewDraw. This document attempts to capture the results. Ammendements (salkow) include EPD 3.0 changes

Stuart Brorson also consulted a posting by juha.manninen@datex-ohmeda.com to the Innoveda user's group <[http://groups.yahoo.com/group/innoveda\\_users/message/450](http://groups.yahoo.com/group/innoveda_users/message/450)> which supports my conclusions.

Note that Stuart Brorson was using ViewDraw 8.0.0 run via **eProduct designer version 2.0**. Other versions of ViewDraw may use a different format. Finally, there is no guarantee that the information contained herein is correct or complete. Stuart Brorson have used it only briefly to fix a problem with one of his symbol files. Use it at your own risk. The example show herein, however is from EPD 3.0. This additions have been incorporated into this portion of the document by Steven Salkow.

## Symbol file format

\Thursday, January 29, 2004

### V

Version number.

### K

According to several discussions on Usenet, this line is a magic number created from the ViewLogic license and the file name. If you change this line, you can break your file. Do not edit this line. This is also linked to the Version Number (salkow)

### Y

Symbol type. The format is: Y Type

Attribute	Explanation
type	0 = composite 1 = module 2 = annotate 3 = pin

### D

Determines the size of the symbol block. The format is:

**D** xmin ymin xmax ymax

Where the min and max values are the numeric values giving the symbol block size available on the "properties" pop-up menu.

## Z

Sheet size. The format is: **Z size**

Attribute	Sheet size
size	0 = A 1 = B .... 5 = A4 .... 10 = Z (user defined)

## i

Unknown function

## U

Attribute available under the “properties” pop-up menu. The format is:

**U xpos ypos text\_size rotation text\_pos scope attribute**

Attribute	Explanation	Comment
xpos, ypos	Position of attribute text	
text_size	Font size of text	Usually 10
rotation	0 = 0 1 = 90 2 = 180 3 = 270	
text_pos	Location of text anchor 1 = lower 2 = middle 3 = upper	
Scope	0 = local 1 = global	
attribute	Text form of attribute, usually expressed as Attribute=value	

## P

Pin. The format is: **P pin\_id xend yend xbeg ybeg rotation side invert**

Attribute	Explanation	Comment
pin_id	Unique numerical ID of pin. Numbering starts at 1.	
xend, yend, xbeg, ybeg	Begin and end of line designating pin.	Right and left side reverse this so when INVERT is selected, the bubble goes on the inside edge of the symbol.
Rotation	0 = 0 1 = 90 2 = 180 3 = 270	
Side	Top side = 0 bottom side = 1 left side = 2 right side = 3	
INVERT	0 = not inverted 1 = inverted (bubble on pin)	

## A

Attribute attached to the preceeding pin.

The format is: **A xpos ypos text\_size rotation text\_pos visibility Attribute**

Attribute	Explanation	Comment
xpos, ypos	Position of attribute	
text_size	Font size of text	Usually 10
rotation	0 = 0 1 = 90 2 = 180 3 = 270	
text_pos	Location of text anchor 1 = lower 2 = middle 3 = upper	
visibility	0 = invisible 1 = visible 2 = name only 3 = value only	
Attribute	Text form of attribute, usually expressed Attribute=value	

## L

Label attached to the preceeding pin.

The format is: **L xpos ypos text\_size rotation text\_pos scope visibility logic\_sense text\_label**

Attribute	Explanation	Comment
xpos, ypos	Position of attribute	
text_size	Font size of text	Usually 10
rotation	0 = 0 1 = 90 2 = 180 3 = 270	
text_pos	Location of text anchor 1 = lower 2 = middle 3 = upper	
scope	0 = local 1 = global	Usually Local
visibility	0 = invisible 1 = visible 2 = name only 3 = value only	
logic_sense	0 = normal 1 = inverted (bar above label)	
text_label	Text label of pin	

## b

Determines the size of a box drawn on the screen (inside the symbol block). The format is:

**b xmin ymin xmax ymax**

## E

End of file.

## Other information

### Line continuation

Note that line continuation is effected by placing a '+' symbol in the next line, inserting one space, and then continuing with the information from the previous line.

Uncommented file follows:

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Z 10
i 7
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U 0 -45 15 0 3 1 PARTS=1
U 0 -30 15 0 3 1 REFDES=U?
U 0 -15 15 0 3 1 DEVICE=EXAMPLE
P 3 110 190 110 160 0 0 0
A 117 175 15 5 2 0 PINTYPE=ANALOG
A 111 184 15 6 9 3 #=3
L 110 160 15 5 2 0 1 0 VCC
P 4 240 130 210 130 0 3 0
A 210 140 15 0 2 0 PINTYPE=BI
A 210 130 15 0 3 3 #=5
L 210 130 15 0 8 0 1 0 OUT1
P 5 240 110 210 110 0 3 0
A 210 120 15 0 2 0 PINTYPE=OUT
A 210 110 15 0 3 3 #=6
L 210 110 15 0 8 0 1 0 ERROR
P 6 110 0 110 30 0 1 0
A 117 30 15 1 2 0 PINTYPE=ANALOG
A 94 30 15 2 9 3 #=4
L 110 30 15 1 2 1 1 0 GND
P 2 0 110 30 110 0 2 0
A 45 117 15 0 2 0 PINTYPE=IN
A 22 110 15 0 9 3 #=2
L 30 110 15 0 2 0 1 0 IN2
P 1 0 130 30 130 0 2 1
A 45 137 15 0 2 0 PINTYPE=IN
A 23 130 15 0 9 3 #=1
L 30 130 15 0 2 0 1 0 IN1
b 28 30 210 163
E
```