

Title: PDF Export for Capture Designs

Product: OrCAD Capture and Allegro DE CIS since version SPB 16.3, Hotfix 13

Summary: This application note describes how you set up the PDF Export in Capture.

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1 Introduction

Since SPB 16.3 Hotfix 13 a PDF Export is available in Capture!

The PDF Export is a shareware utility built with Tcl/Tk. This document describes how you can set up your PDF Export.

Since spring 2013 exists an automatic installation that does all the steps described in chapter 8 and 9. More about the installation of the PDF Export in chapter 7.

2 Output PDF File Features

There are two PDF files generated-

- Design PDF file
- Design object properties PDF file (optional, this is useful for property values searching etc.)

The Design PDF file generated is rich with the following features present:

- The design hierarchy tree (under bookmarks)
- The reference designators list (under bookmarks)
- The nets and connected component pins (under bookmarks)
- The descend-ability for hierarchical blocks
- In-place properties for all types of design objects on clicking the object
- Bidirectional cross-probing of the object with properties PDF file

3 Requirements

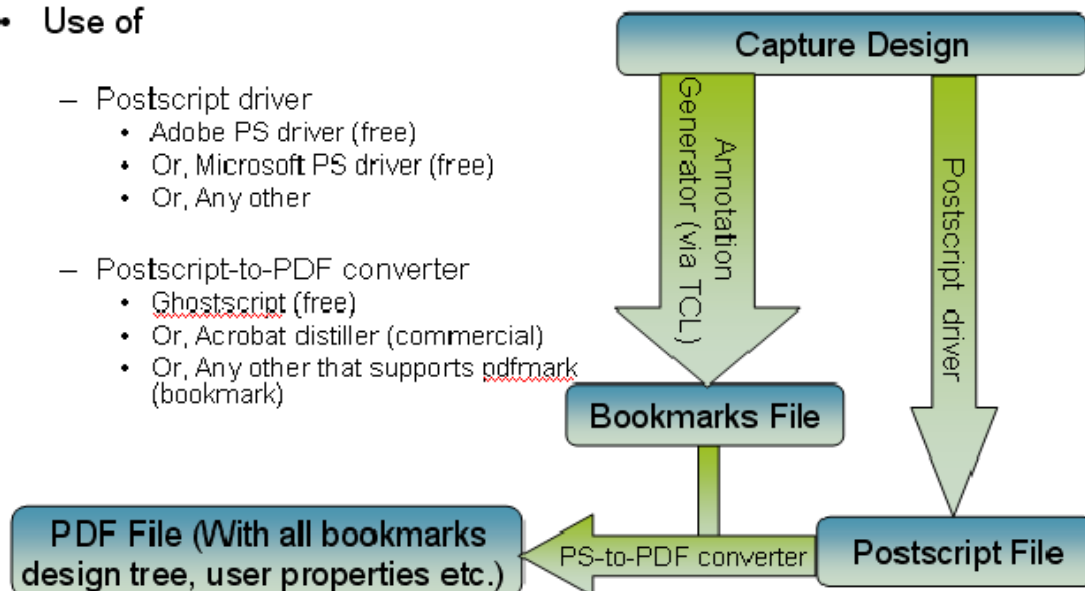
- 1) OrCAD Capture release 16.3, hotfix-s013 or newer
- 2) Third party Postscript driver
- 3) Third party Postscript-to-PDF converter

As you can see on the following use model, a Capture Design is converted into Postscript Files with a Postscript Driver. A separate Postscript to PDF converter creates the PDF Document.

PDF export of Capture Design

- Use of

- Postscript driver
 - Adobe PS driver (free)
 - Or, Microsoft PS driver (free)
 - Or, Any other
- Postscript-to-PDF converter
 - Ghostscript (free)
 - Or, Acrobat distiller (commercial)
 - Or, Any other that supports `pdfmark` (bookmark)



4 Setting up the PDF Writer

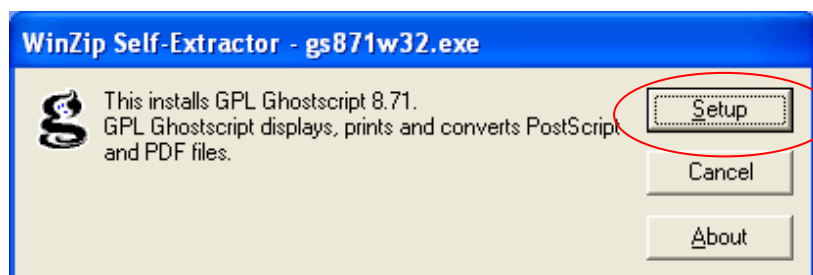
Each PDF Writer usually installs a Postscript driver (which appears as printer name in the Windows dialog box) and a Postscript-to PDF converter which converts the Postscript files into a PDF file.

5 Installation of the Postscript to PDF Driver

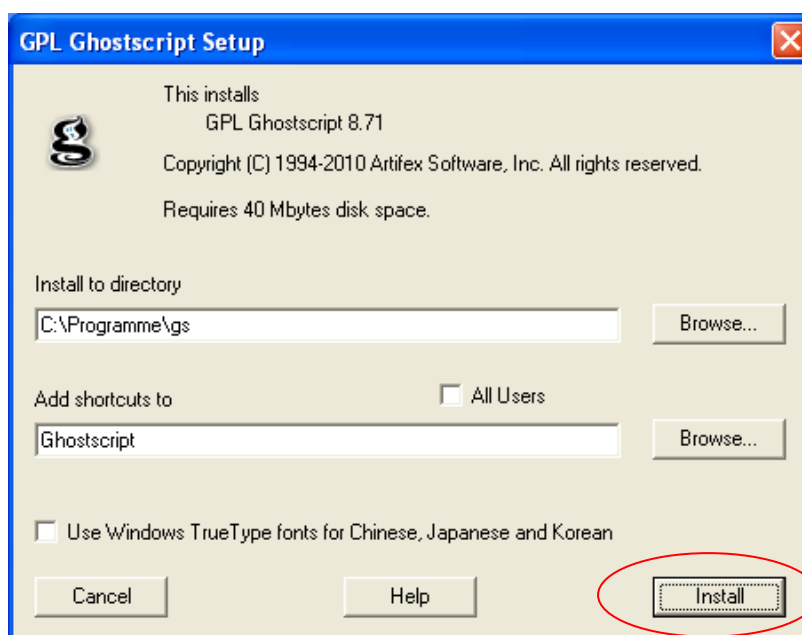
As Postscript to PDF Driver you can use the Acrobat Distiller, Ghostscript or any other converter that supports pdfmark (bookmark). How you can install the free Ghostscript driver is explained in the following chapter.

5.1 Installation of Ghostscript

Download the Ghostscript software from the internet (free), for example on: <http://sourceforge.net/projects/ghostscript/files/GPL%20Ghostscript/8.71/gs871w32.exe/download> and install the setup.exe:



Choose the directory on which you want to install the Ghostscript:

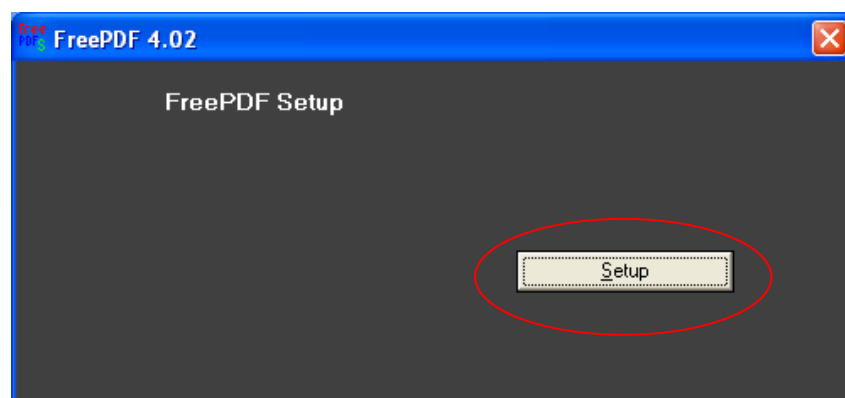


6 Installation of Postscript Driver (Free PDF)

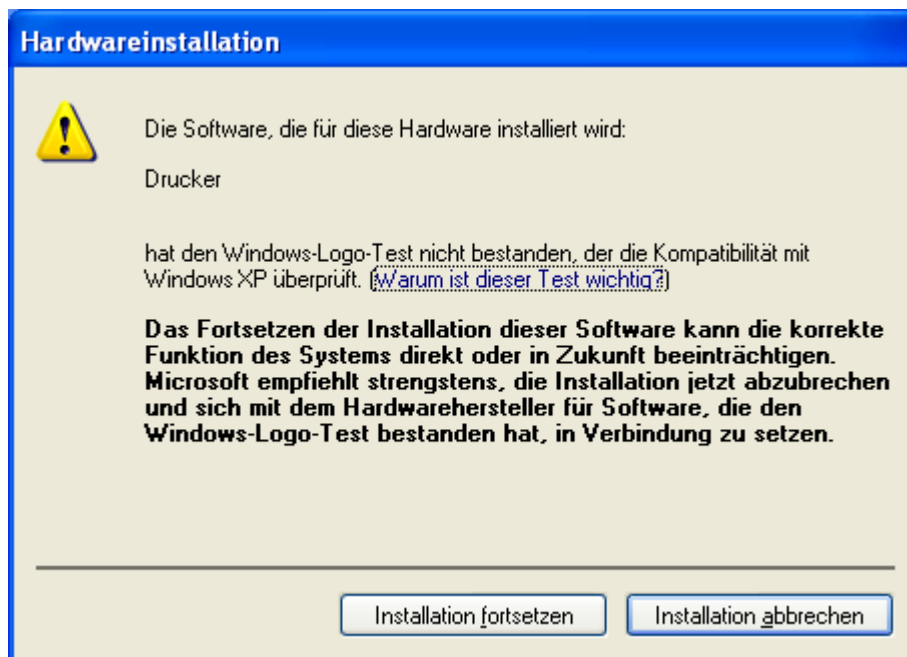
There exist several free Postscript Drivers. This application note describes the installation of the FreePDF (freeware).

6.1 Installation of FreePDF

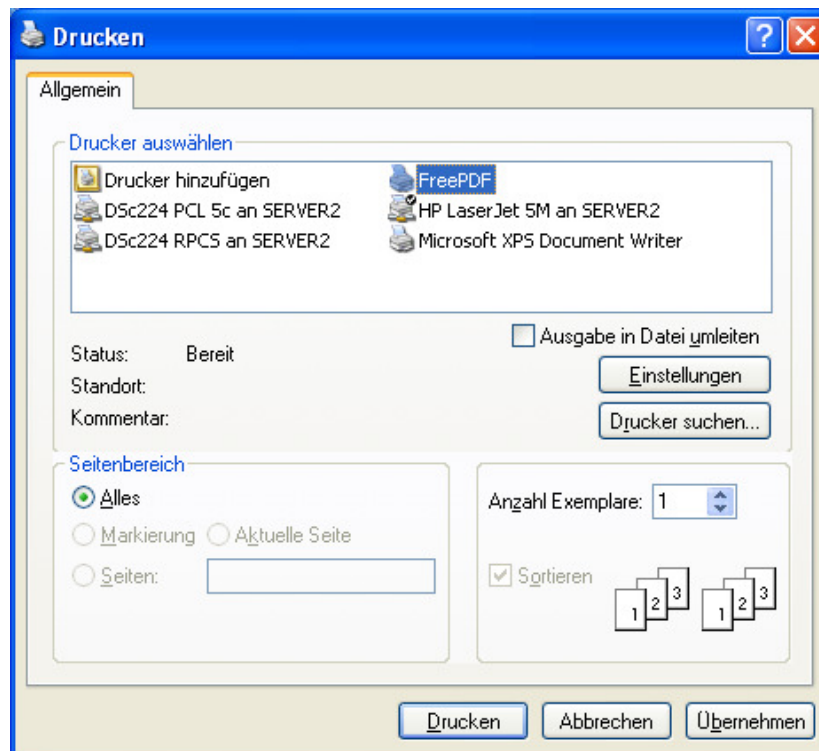
Download the most recent version on: <http://freepdfxp.de> or directly on <http://dieonlineseite.de/freepdf> and start the installation:



You might get a warning, that this software didn't pass the Windows-Logo-Test. In this case, you can continue the installation.



After the successful installation of FreePDF a PDF writer should be available when you plot a document on Windows.



7 Installer for PDF Export

The Installer does all the settings and entries described in chapter 8 and 9.

Requirement: You have installed a freeware or commercial PDF writer and you can use it from any program.

You can download the installer from:

<http://www.flowcad.ch/de/produkte/floware/capture-pdf-export>

During the Setup you have to choose the PDF writer, which you have already installed.

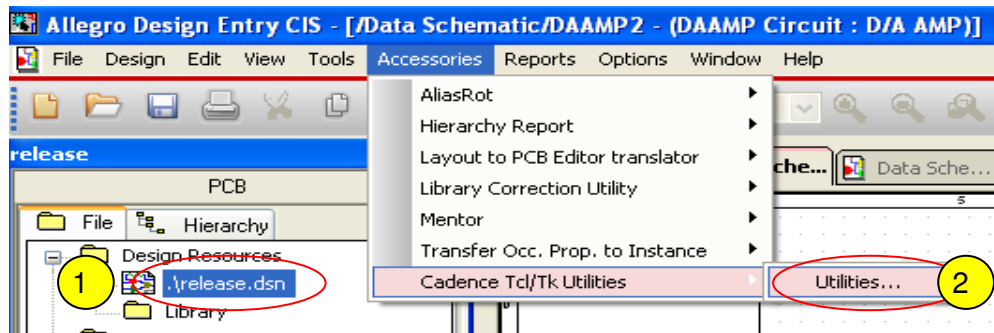
Use:

In the Project Manager window select the .dsn file and click on:

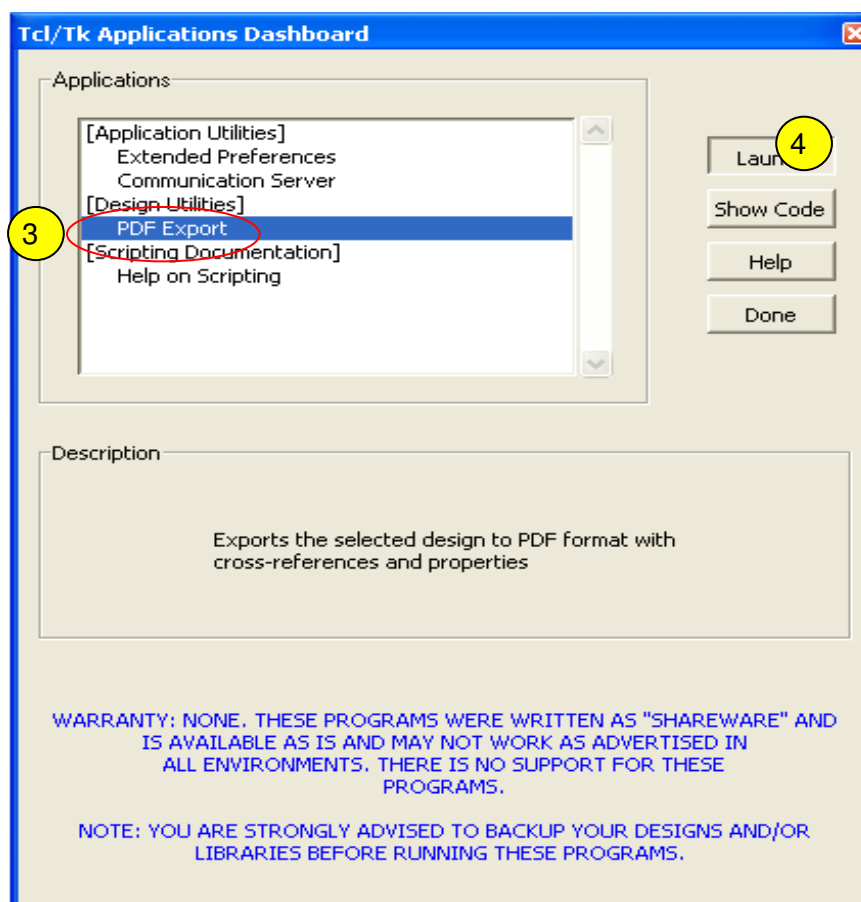
FloWare -> PDF Export

8 Set up PDF Export

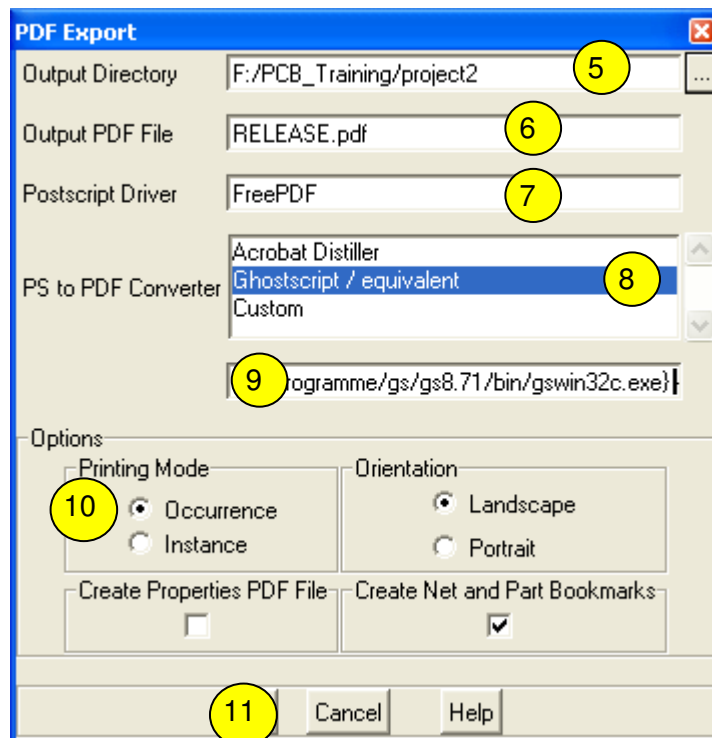
1. Select the .dsn file in the projectmanager.
2. With following command you can start the application: Accessories->Cadence Tcl/Tk Utilities->Utilities...



3. Select the PDF Export Utilities
4. Click on the "Launch" Button



5. Define the Output Directory
6. Define the Output pdf file-name
7. Modify the Name of the Postscript Driver, in our case it's the "FreePDF".
8. Choose the Ghostscript driver as PS to PDF Converter
9. Add the path to the ghostscript driver on your local machine in the curly brackets. In this case it's {C:/Programme/gs/gswin32c.exe}
- Do not delete the text after the brackets!
10. Define your print options (More detailed explanations are further down)
11. Press ok -> the printing process starts, open the created .pdf file in you defined directory.



Options:

- **Printing Mode** - Two modes of exporting the design into PDF are supported – Occurrence mode and Instance mode. Default value – “Occurrence mode”
- **Orientation** - Two orientations of exporting the design into PDF are supported – Landscape and Portrait. Default value – “Landscape”
- **Create Properties PDF File** - If this option is turned ON, a separate Properties PDF file (Name is Prop<Design>.pdf) is also created for all the design objects. A cross-probing between the Design PDF file and properties PDF file is also in-built. The generation of this file usually takes more time because of extensive data. Default value – “OFF”
- **Create Net and Part Bookmarks** - If this option is turned ON, the bookmark section in the design PDF file shows two additional information trees – one for all the reference designators and another for all the nets with their connected components. Default value – “ON”

9 Permanently change of the Default Path and Postscript Driver Name

When you close Capture, the settings of path and names in the PDF Export menu are lost. You can define the path and names permanently, when you edit the capPdfUtil.tcl file. You find this file in following directory:

<Installdirectory>:\SPB1630\tools\capture\tclscripts\capUtils

You can open this file with a Text-Editor.

1. Modify the path of the ghostscript writer in the curly brackets, in this case C:\Programme\gs\gs8.71\bin\ was added
2. Change the name of your Postscript Driver, in this case "FreePDF" was added

```
capPdfUtil.tcl - Editor
Datei Bearbeiten Format Ansicht ?

proc ::capPdfutil::populatedefaultPSToPDFConverterList { } {
    set ::capPdfutil::mpSToPDFConverterList {
        {
            "Acrobat Distiller"
            {{acrodist.exe} /N /q /o $::capPdfutil::mPdfFilePath $::capPdfutil::mPSFilePath}
        }
        {
            "Ghostscript / equivalent"
            {{C:/Programme/gs/g8.71/bin/gswin32c.exe} -sDEVICE=pdfwrite -soutputFile=$::cap
        }
        {
            "Custom"
            ""
        }
    }
}

proc ::capPdfutil::init { } {
    set ::capPdfutil::mInitialized 0
    set ::capPdfutil::mActivePMDesign 0
    set ::capPdfutil::mpSToPDFConverterCustomCommand 0
    set ::capPdfutil::mIsInstMode "0"
    set ::capPdfutil::mIsLandscapeOrientation "1"
    set ::capPdfutil::mIsCreateNetAndPartBookMarks "1"
    set ::capPdfutil::mIsCreatePropertiesPdfFile "0"
    set ::capPdfutil::mpSToPDFConverterOptionIndex 0
    set ::capPdfutil::mPSDriver "FreePDF"
}
```

- The PDF Export always chooses the first entry in the list as Postscript to PDF Driver. If you change the order of the Postscript to PDF Converter, you don't have to select the Ghostscript driver every time, it is chosen automatically. Change the order as in the following example, take care that you don't miss a bracket.

```
capPdfUtil.tcl - Editor
Datei Bearbeiten Format Ansicht ?
proc ::capPdfUtil::populateDefaultPSToPDFConverterList { } {
    set ::capPdfUtil::mPSToPDFConverterList {
        {
            "Ghostscript / equivalent"
            {{C:\Programme\gs\gs8.71\bin\gswin32c.exe} -sDEVICE=pdfwrite -sOutputFile=
        }
        {
            "Acrobat Distiller"
            {{acrodist.exe} /N /q /o $::capPdfUtil::mPdfFilePath $::capPdfUtil::mPSToPDFConverterList
        }
        {
            "Custom"
            ""
        }
    }
}

proc ::capPdfUtil::init { } {
    set ::capPdfUtil::mInitialized 0
    set ::capPdfUtil::mActivePMDesign 0
    set ::capPdfUtil::mPSToPDFConverterCustomCommand 0
    set ::capPdfUtil::mIsInstMode "0"
    set ::capPdfUtil::mIsLandscapeOrientation "1"
    set ::capPdfUtil::mIsCreateNetAndPartBookMarks "1"
    set ::capPdfUtil::mIsCreatePropertiesPdfFile "0"
    set ::capPdfUtil::mPSToPDFConverterOptionIndex 0
    set ::capPdfUtil::mPSDriver "FreePDF"
}
```

10 Reference

<installdirectory>.\SPB1630\tools\capture\tclscripts\OrCAD_Capture_TclTk_Extensions.pdf
or
<installdirectory>.\SPB_16.5\tools\capture\tclscripts\OrCAD_Capture_TclTk_Extensions.pdf
or
<installdirectory>.\SPB_16.6\tools\capture\tclscripts\OrCAD_Capture_TclTk_Extensions.pdf