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How To Extract CAD Data

Many CAD / PCB Board Design Software applications allow for the export of CAD data in the ASCII (text) format. This data can be imported directly into our CircuitCam tool. By supplying this data in addition to Gerber & Centroid files, you greatly simplify the programming work REYcomp must perform in order to process your job. Unfortunately, there is not yet a standard filename to describe this data and each application has a different method for creating (or exporting) the data. Having the CAD data in ASCII format is not required but is very helpful. This document includes instructions for creating an ASCII formatted CAD data file with a number of the more popular CAD applications.

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1 Cadence Allegro

Extraction Procedure:

Cadence Allegro requires the use of a script available from www.aiscorp.com The script produces a "ccam.cad" file that can then be imported into CircuitCAM.

Common File Extension:

".cad"

File header:

```
A!REFDES!CLASS!SUBCLASS!COMP_DEVICE_TYPE!COMP_PACKAGE!SYM_ROTATE!PIN_NUMBER!DRILL_HOLE_NAME!NET_NAME!PIN_X!PIN_Y!START_LAYER_NAME!END_LAYER_NAME!GRAPHIC_DATA_NAME!GRAPHIC_DATA_1!GRAPHIC_DATA_2!GRAPHIC_DATA_3!GRAPHIC_DATA_4!GRAPHIC_DATA_5!GRAPHIC_DATA_6!GRAPHIC_DATA_7!GRAPHIC_DATA_8!GRAPHIC_DATA_9!GRAPHIC_DATA_10!SYM_NAME!SYM_X!SYM_Y!SYM_MIRROR!  
J!D:\cam\102.brd!Tue Apr 25 15:21:27 2000!-100.000!-170.000!500.000!430.000!0.001!millimeters!B01!47.2  
mil!6!OUT OF DATE!  
S!BOARD GEOMETRY!OUTLINE!!!0.000!!!!!!ARC!-8.095!-9.949!-8.095!-9.949!-10.000!-9.949!1.905!0.000!COUNTERCLOCKWISE!NOTCONNECT!TARGET!-10.000!-10.000!NO!
```

A Cadence Allegro file can be very easily distinguished by the ! marks in the output file. 29 data fields are required in the output file.

2 EE Designer III ASCII File

Common File Extension:

".ala"

3 GenCAD v 1.4 from Veribest

Extraction Procedure:

Veribest provides a stand-alone application called Report Writer. Use this application to export the "Mitron" export option, which causes Veribest to produce a GenCAD compliant output ASCII file.

Common File Extension:

".cad"

File Header:

```
$HEADER  
GENCAD 1.4  
USER RSI-TRANSLATOR GENCAD OUTPUT V:10  
DRAWING scm  
REVISION Wed Jan 07 15:13:12 1998  
UNITS USER 1000  
ORIGIN 0 0  
INTERTRACK 0  
$ENDHEADER
```

4 Incases TL CAD File

Common File Extension:

“.tl”

5 IPC-D-356

Common File Extensions:

“.net” or “.356”

File Header:

```
P JOB 010670x2.brd
P UNITS CUST
P DIM N
C
C Feb 11 16:26:42 2000
Company.
C IPC-D-356 Netlist From Allegro
C
327N/C - A02X-000460Y+036040X1200Y1200R000 S1
```

6 Mentor Graphics Expedition

Extraction Procedure:

1. Select Export under the File menu.
2. Select the General Interface menu item.
3. Select the Mitron GenCAD option.

Common File Extension:

“.cad”

File Header:

```
$HEADER
GENCAD 1.4
USER RSI-TRANSLATOR GENCAD OUTPUT V:10
DRAWING scm
REVISION Wed Jan 07 15:13:12 1998
UNITS USER 1000
ORIGIN 0 0
INTERTRACK 0
$ENDHEADER
```

7 Mentor Graphics Neutral File

Extraction Procedure:

1. Select the “Write Neutral Files” command from the Output menu of the FabLink utility.
2. Select to output all options.

Common File Extension:

“.neu”

File Header:

```
# file : /users/ngd/pci_audio/t20318pt1/pcb/mfg/neutral_file.mech
# date : Wednesday June 10, 1998; 13:58:18
#
```

8 OrCAD

Extraction Procedure:

1. Open the OrCAD Layout Application. DO NOT OPEN the Project or the Board.
2. Select Export from the File menu.
3. Select the GenCAD option.
4. Browse to the location of the file and Accept.

Common File Extension:

“.cad”

File Header:

```
$HEADER  
GENCAD 1.4  
USER RSI-TRANSLATOR GENCAD OUTPUT V:10  
DRAWING scm  
REVISION Wed Jan 07 15:13:12 1998  
UNITS USER 1000  
ORIGIN 0 0  
INTERTRACK 0  
$ENDHEADER
```

9 PADS | PowerPCB | PADS Perfrom | PADS 2000 | PADS Work

Extraction Procedure:

1. Through the In/Out menu, select ASCII Out (F4) command.
2. Select the “All” option and the PADS-2000 or PADS-3000 format.
3. Input the name to be used for the output file.

Common File Extension:

“.asc”

File Header:

```
!PADS-POWERPCB-V4.0-BASIC! DESIGN DATABASE ASCII FILE 1.0  
*PCB* GENERAL PARAMETERS OF THE PCB DESIGN
```

10 PANTHEON PDB File

Common File Extension:

none

11 P-CAD | Accel EDA | Accel Tango | Accel PCAD | P-CAD for DOS | P-CAD PDIF Design File

Extraction Procedure:

1. From the File Menu select SAVE AS
2. Select the ASCII .PCB option

OR

1. From the File Menu select Export
2. Select the PDIF

Common File Extension:

“.pcb” or “.pdf”

File Header:

for “.pdf”:

```
%*****  
%  
% Program : ACCEL P-CAD PCB Version 14.01.03  
% Date : Jan 28 1999  
% Time : 08:00:05 PM  
% File In : c:\accel\demo\modfax0.pcb  
% File Out : c:\accel\demo\modfax0.pdf  
% Format : P-CAD DATABASE INTERCHANGE FORMAT  
%  
%*****
```

for “.pcb”:

```
ACCEL_ASCII "C:\WINDOWS\Desktop\Htrdemo.pcb"  
(asciiHeader  
  (asciiVersion 3 0)  
  (timeStamp 2002 1 17 9 18 44)  
  (program "P-CAD 2001 PCB" "16.02.04")  
  (copyright "Copyright © 1991-2001 Altium Limited")  
  (fileAuthor "")  
  (headerString "")  
  (fileUnits Mil)  
  (guidString "{AA3EBDF5-111B-48FC-9292-C084E2766C15}")  
)
```

12 PROTEL 98/99 ASCII PCB File ver3

Extraction Procedure:

1. Within Protel, select the File menu->Save As.
2. When in the File Format dialog, select ASCII .PCB

Common File Extension:

“.pcb”

File Header:

```
[RECORD=Board|FILENAME=D:\Shoobox\PCB_design\SwitchTest\Backup of Copy of  
SW_2.PCB|KIND=Protel_Advanced_PCB|VERSION=3.00|DATE=24-May-  
2001|TIME=11:52:14|ORIGINX=2050mil|ORIGINY=2250mil|BIGVISIBLEGRIDSIZ  
E=100000.000|ELECTRICALGRIDRANGE=0.5mil|ELECTRICALGRIDENABLED=TRUE|SNAPGRIDSIZ  
E=5000.000000|SNAPGRIDSIZEX=5000.000000|SNAPGRIDSIZEY=5000.000000|TRACKGRIDSIZ  
E=5000.000000|VIAGRIDSIZEX=5000.000000|VIAGRIDSIZEY=200  
000.000000|COMPONENTGRIDSIZEX=5000.000000|COMPONENTGRIDSIZEY  
=5000.000000|CURRENTWORKINGLAYER=BOTTOM|DOTGRID=TRUE|DISPLAYUNIT=1|PLANE1NETNAME=(No  
Net)|PLANE2NETNAME=(No Net)|PLANE3NETNAME=(No Net)|PLANE4NETNAME=(No Net)|PLANE5NETNAME=(No  
Net)|PLANE6NETNAME=(No Net)|PLANE7NETNAME=(No Net)|PLANE8NETNAME=(No Net)|PLANE9NETNAME=(No  
Net)|PLANE10NETNAME=(No Net)|PLANE11NETNAME=(No Net)|PLANE12NETNAME=(No  
Net)|PLANE13NETNAME=(No Net)|PLANE14NETNAME=(No Net)|PLANE15NETNAME=(No  
Net)|PLANE16NETNAME=(No Net)
```

13 SCI Cards Neutral File

Extraction Procedure:

From SCI-Cards you must extract a SCI-Cards Neutral file.

Common File Extension:

“.cii”

14 Supermax CAD

Common File Extension:

“.ipl”

15 Tango for DOS

Extraction Procedure:

1. From the File Menu select SAVE AS
2. Select the ASCII .PCB option

16 Ultiboard

Extraction Procedure:

1. Use the the DDF2GenCAD convertor v1.30 supplied by Ultiboard.
2. Import as a Gencad File

File Header:

```
$HEADER  
GENCAD 1.4  
USER RSI-TRANSLATOR GENCAD OUTPUT V:10  
DRAWING scm  
REVISION Wed Jan 07 15:13:12 1998  
UNITS USER 1000  
ORIGIN 0 0  
INTERTRACK 0  
$ENDHEADER
```

17 Valor ODB++ Cad Project

Extraction Procedure:

1. A .tar or a .tgz file is normally supplied containing the full directory structure of the Board.
2. Unzip keeping the directory structure within the .tar file.
3. To import browse to the MATRIX folder and select the MATRIX file.

Common File Extension:

“.tar” or “.tgz”

18 ZUKEN VISULA and CADSTAR

Extraction Procedure:

1. In the Job menu, select Interface option.
2. Select CADIF output from the list.

Common File Extension:

“.paf”

CADstar is capable of outputting the CADIF file format.

Please use the output option for CADIF and import via the CircuitCAM Visula/CADIF interpreter.

File Header:

```
cadif
(format CADIF 4 0)
(design
(dataSet ARCHIVE_XFER_FILE ROUTE_RULES PLACE_RULES)
(paper (name "B")
(box (pt -21590000 -13970000) (pt 21590000 13970000))
(designOrigin (pt 0 0))
```