



# Smart Electronics & Assembly, Inc

Dear Customer:

As part of our continuing effort to improve our manufacturing efficiency, expediency, quality, and responsiveness, we have invested in Aegis Industrial Software's Computer Integrated Manufacturing software for our process. This software system converts your CAD design data and BOM data into a wide array of useful information such as robotic assembly machine programs and quality documentation more quickly and accurately than ever possible with manual methods.

In order to apply the benefits of this software to your production projects, we need your assistance in obtaining the types of data the software requires in order to function most efficiently. This document has been prepared as a guide for your PCB design department as well as for personnel providing us with bills of material. Please provide this information as a quick reference to any and all personnel involved in providing our factory with assembly data.

## 1. Bill of Material Data Requirements

In order to successfully process your assemblies with our new CircuitCAM software, we will require a bill of material. However, more data is always beneficial in order to cope with unforeseen file difficulties, so if more information and formats are available, please provide them.

Format	Supported in...		Delimiters	Required Fields	Preferred Fields	Optional Text Fields	Optional Number Fields	Optional Boolean Fields	Custom BOM Fields	Additional Functions in CheckPoint
	CheckPoint	CircuitCAM								
Text (ASCII)	Yes	Yes	Fixed Column or Character	Part Number, Reference Designators	Description, Quantity (CheckPoint)	Part Marking, Package, Population Type, Customer P/N, Mfr, Mfr P/N, Vendor, Vendor P/N, Bin Location, Stock Code, Software Ver, Part Rev, URL	Cost, Height (mils)	Polarity, Socketed (Y/N, Yes/No, T/F, True/False)	Unlimited	Template Definition, Join Multiple Files to Form 1 BOM, Analysis Reports, Use Customer or Internal Number as Primary, AML/AVL Mgmt, Revision Control
Excel	Yes	No	N/A							
ODBC (Access)	Yes	No	N/A							

## 2. CircuitCAM Data Requirements

In order to successfully process your assemblies with our new CircuitCAM software, we will require a bill of materials (refer to Section 1) and one of the following groups of board design data. However, more data is always beneficial in order to cope with unforeseen file difficulties.

### Summary Information of Data Sources

Native CAD Data
Accel EDA , Accel Tango, & Accel PCAD
Cadence Allegro via Aegis Script
DIF (Design Interchange Format), PADS DFT Audit, and C-Link
EE Designer III ASCII File
GenCAD v. 1.4
INCASES TL CAD File
Intergraph Veribest GenCAD
IPC-D-356
Mentor Graphics Neutral File
OrCAD
PADS PowerPCB, PADS Perform, PADS 2000, PADS Work
Pantheon PDB File
P-CAD PDIF Design File
P-CAD for DOS
Protel 98/99 ASCII PCB File
SCI Cards Neutral File
Supermax CAD
Tango for DOS
Ultiboard
Valor ODB++ CAD Project
Zuken Visula and Cadstar

3rd Party CIM Software Applications
Fabmaster FATF File
Panapro / PanaCIM PCB File
Unicam Project File

PCB Design Data	Format	Provides	Required?
Gerber Data	RS-274X, RS-274-D	Locations, reference designators, and board graphics	YES
Aperture List	Text File	Shape information required to render the Gerber image	RS-274-D: YES RS-274-X: NO
Centroid File	Text File	Relative locations of components (defined by reference designator) on the PCB. Allows automatic joining of references to the Gerber data.	NO: However, the use of this file expedites Gerber processing.