

# LinkCAD pattern preparation software

Software for converting DXF files to GDS and performing logical operations

## Description:

This software can be used to convert DXF files into GDSII. It is also useful for performing logical operations on layers within a GDSII file. For example, the inversion of the tone of a layer can be performed quite easily using this software.

Note: In cases where L-Edit fails to invert a pattern, LinkCAD will usually work.

## Invoking:

LinkCAD is available on all [CNF Windows](#) systems... double click the LinkCAD icon on the Desktop.

## Capabilities:

- Convert between GDS, DXF, bitmap (image) and EPS files
- Perform logical operations including: AND, OR, XOR, NOT
- Display the loaded drawings in the built-in CAD viewer, measure distances, and highlight broken polylines
- Support for GDS-TXT, a human-readable version of the GDS-II format that can be opened and edited in a text editor
- Support for Gerber RS-274X
- Extract 2D planar geometries from various 3D CAD file formats
- Merge overlapping polygons
- Convert wires, circles, and donuts to polygon outlines
- Convert quasi-circles to circles
- Connect adjacent wire segments

## Documentation:

AutoCAD allows unclosed polygons, zero-width lines, hatching, more than 200 vertices in a polygon, self-intersecting polygons, but these structures are not supported by the GDS format. If you are converting AutoCAD DXF files to GDS, follow the design rules at the URL below and summarized here:

Rule 1: Use zero-width closed polylines

Rule 2: Don't use hatching

Rule 3: Close open boundaries using LinkCAD's polygon repair feature

Rule 4: Avoid drawing polylines with more than 200 vertices

Rule 5: No self-intersection (boundary crosses itself)

Simple Image Reversal / Tone Reversal example:

Put features on layer 2;

Make a large bounding box on layer 1 around all features;

Read the GDS file into LinkCAD;

Use Tools -> Layer Operations

Specify First Layer to be layer 1 and Second Layer to be layer 2, place result on layer 1

Choose "Subtract 2nd from 1st" radio button

Press START and OK

Continue pressing NEXT button to write output file

## Additional URLs:

- [CNF AutoCAD Pattern Data page](#)
- [AutoCAD to GDS Design Rules](#)
- [LinkCAD Documentation](#)
- [LinkCAD Knowledge Base](#)