

# Altium to Adiva Interface (Quick-Start User Guide)

# Notice

Representations in this User Guide are meant as an overview and quick reference. Full details can be found in the On-Line manuals located at the *ADIVA Corporation* website – [www.adiva.com](http://www.adiva.com)  
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# Getting Started...

Make sure all of your Gerber / Drill files along with their support detail files .DRR and .EXTREP are located in a single directory.

Also, include Altium's IPC-D-356 netlist for automatic Netlist Comparison during the Altium to Adiva conversion process.

## **NOTE:**

ALL data files (Gerber and Drill along with the IPC-356 file) **MUST** be of the same units.

Drill files must be split on output from Altium such that plated holes are in a different file than non-plated holes.

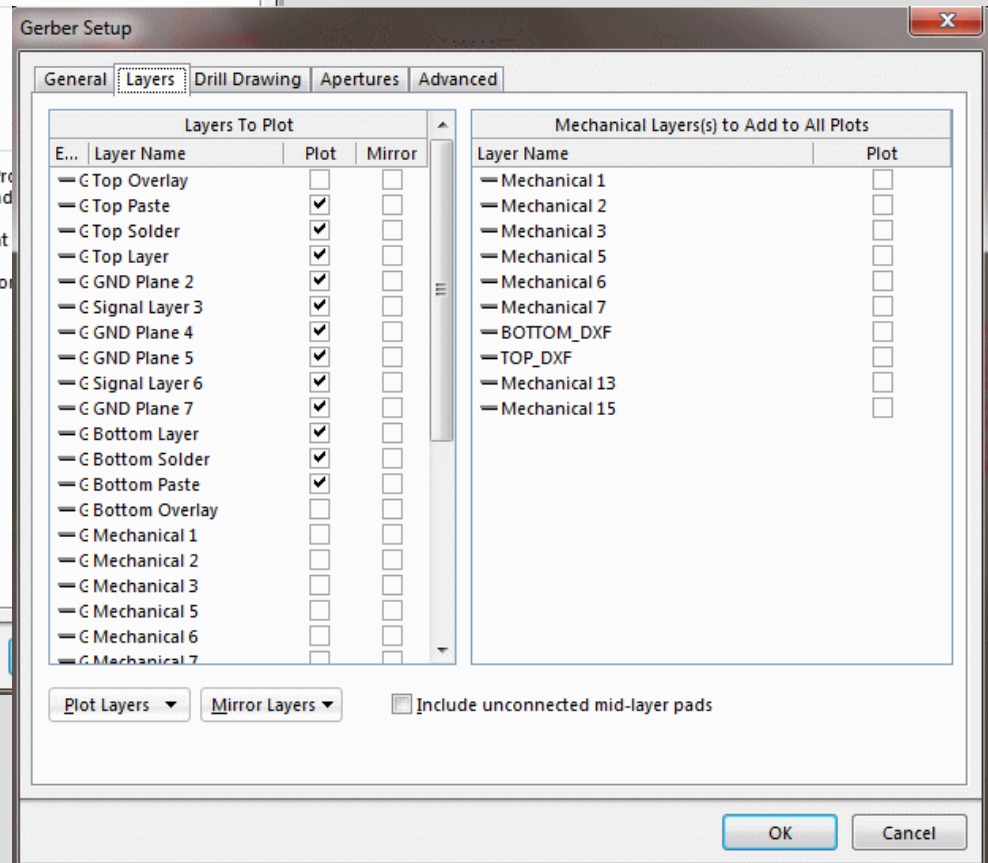
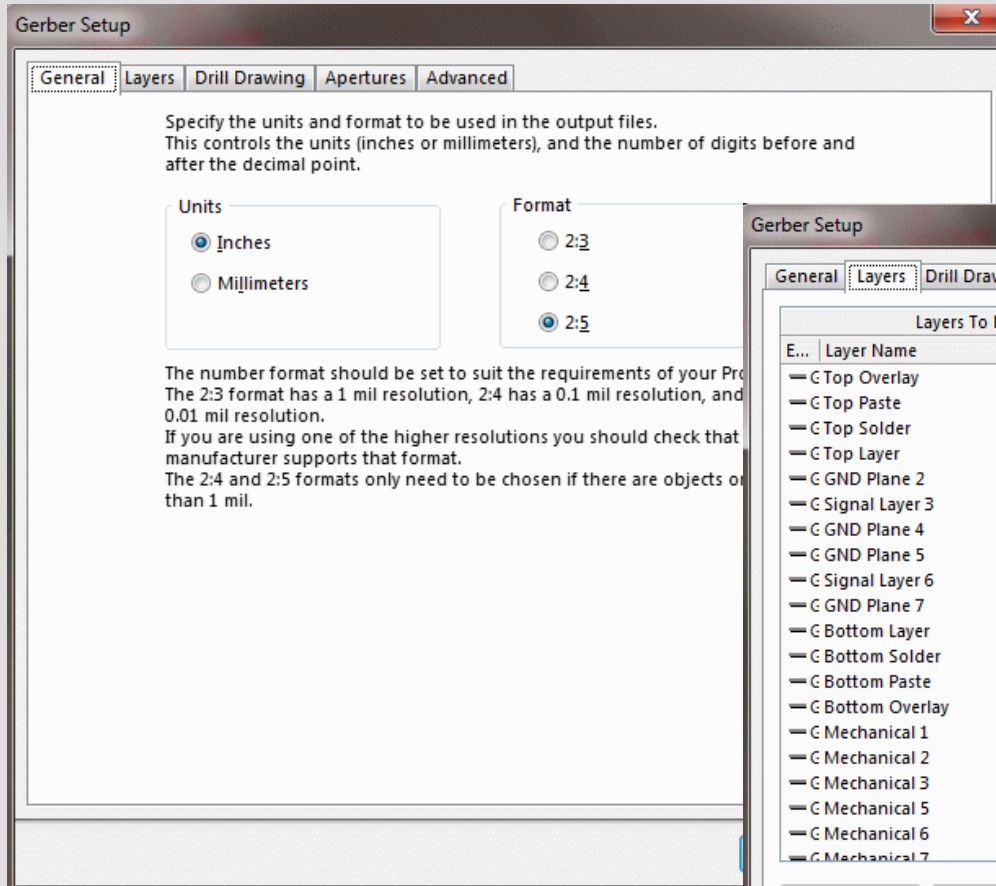
Interface can also be command line driven for scripting purposes. See final page for details.

# Altium > Adiva Process

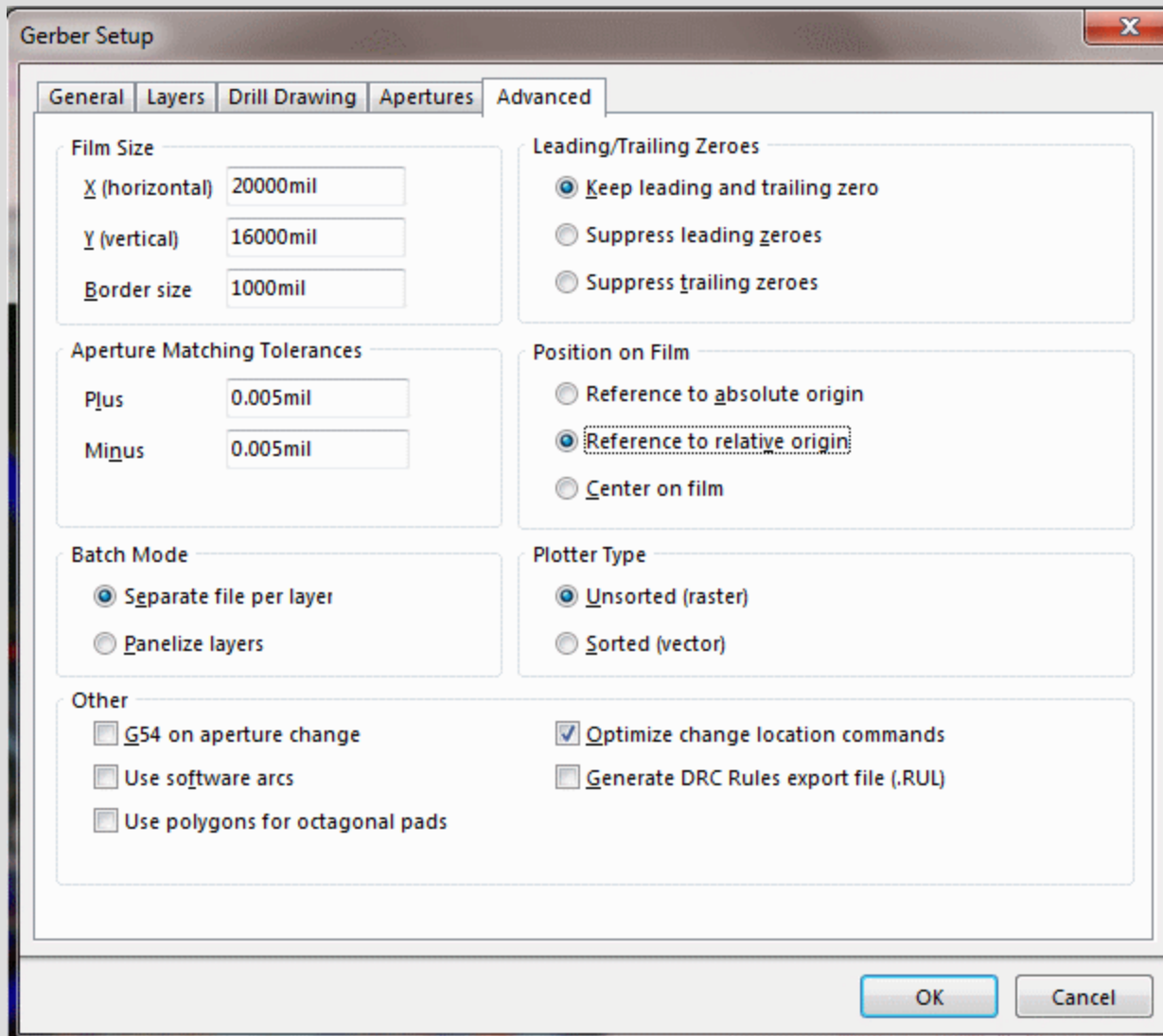
## Basic Steps from Start to Finish

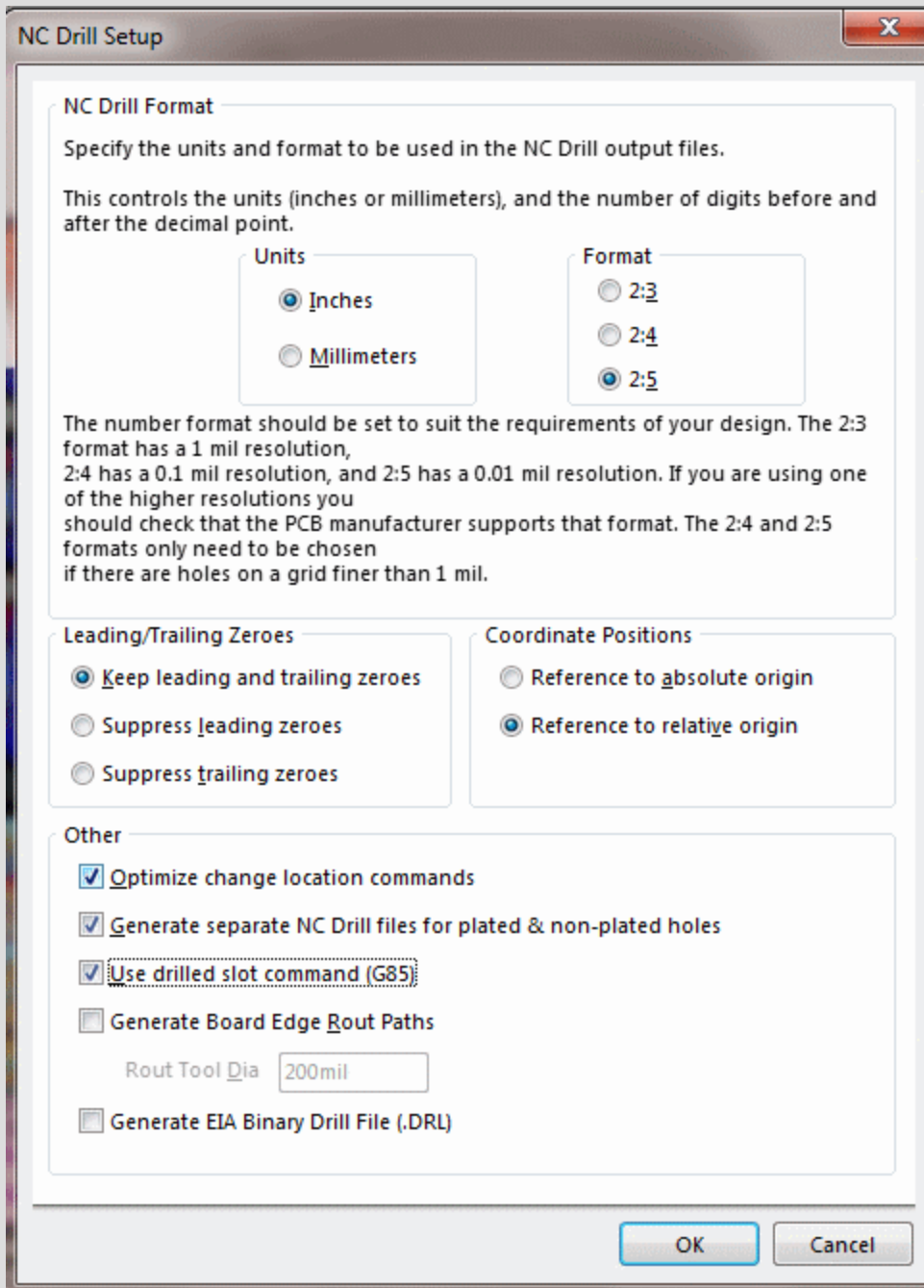
- **Copy** Gerber, Drill. .DRR, .EXTREP & IPC-356 files into a single directory
- Start **Altium to Adiva Interface**
- **Browse** to directory containing files and view layer listing
- **Adjust** Layer Selection, Assignments and Layer Number if required
- **Execute** the conversion process
- When Adiva launches, review Netlist Compare results
- Define Pad and Hole Classes
- Run further DRC Design Analysis

Output file setup for Adiva input is critical. The next two pages show the recommended settings for Gerber file output from Altium...



Output file setup for Adiva input is critical. This page continues the recommended settings for Gerber file output from Altium...





Output file setup for Adiva input is critical.

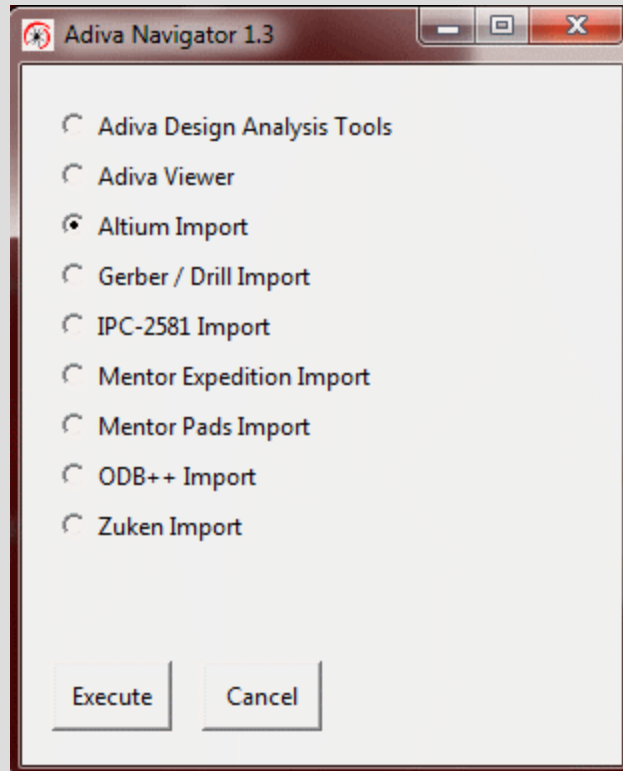
These are the recommended settings for Drill file output from Altium.

These values are critical to proper Drill file formation and interpretation by Adiva import tools.

\*\*\*\*\*

If data is in Metric units, make sure the data format is set to 4-4.

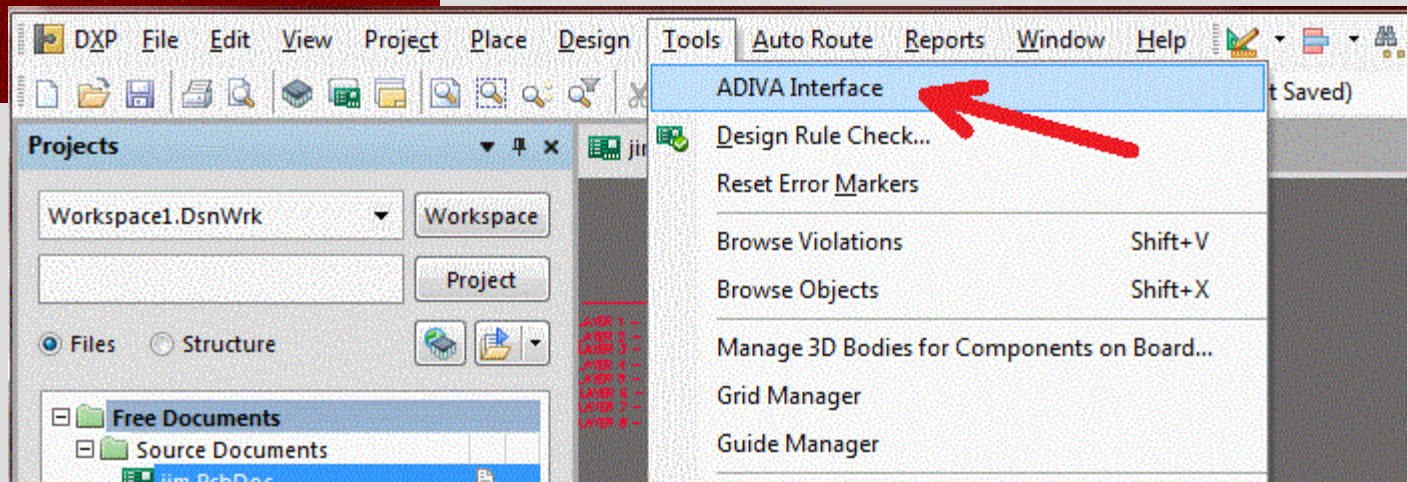
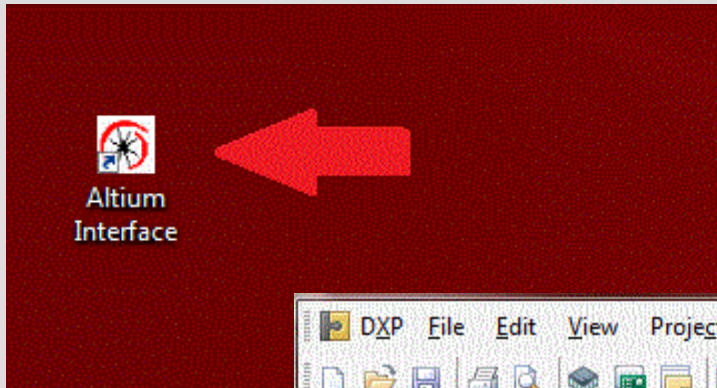
Once Gerber and Drill files are created, if the **Adiva Navigator** was used to startup the **Altium Import...**



...the **Altium to Adiva Interface** will appear...  
(See Page 10)



If not using the **Adiva Navigator**, once Gerber and Drill files are created, either double-click the **Altium Interface** Windows Desktop icon or (if installed) within Altium select the **Tools > Adiva Interface** menu selection...



...the **Altium to Adiva Interface** will appear...  
(See Page 10)

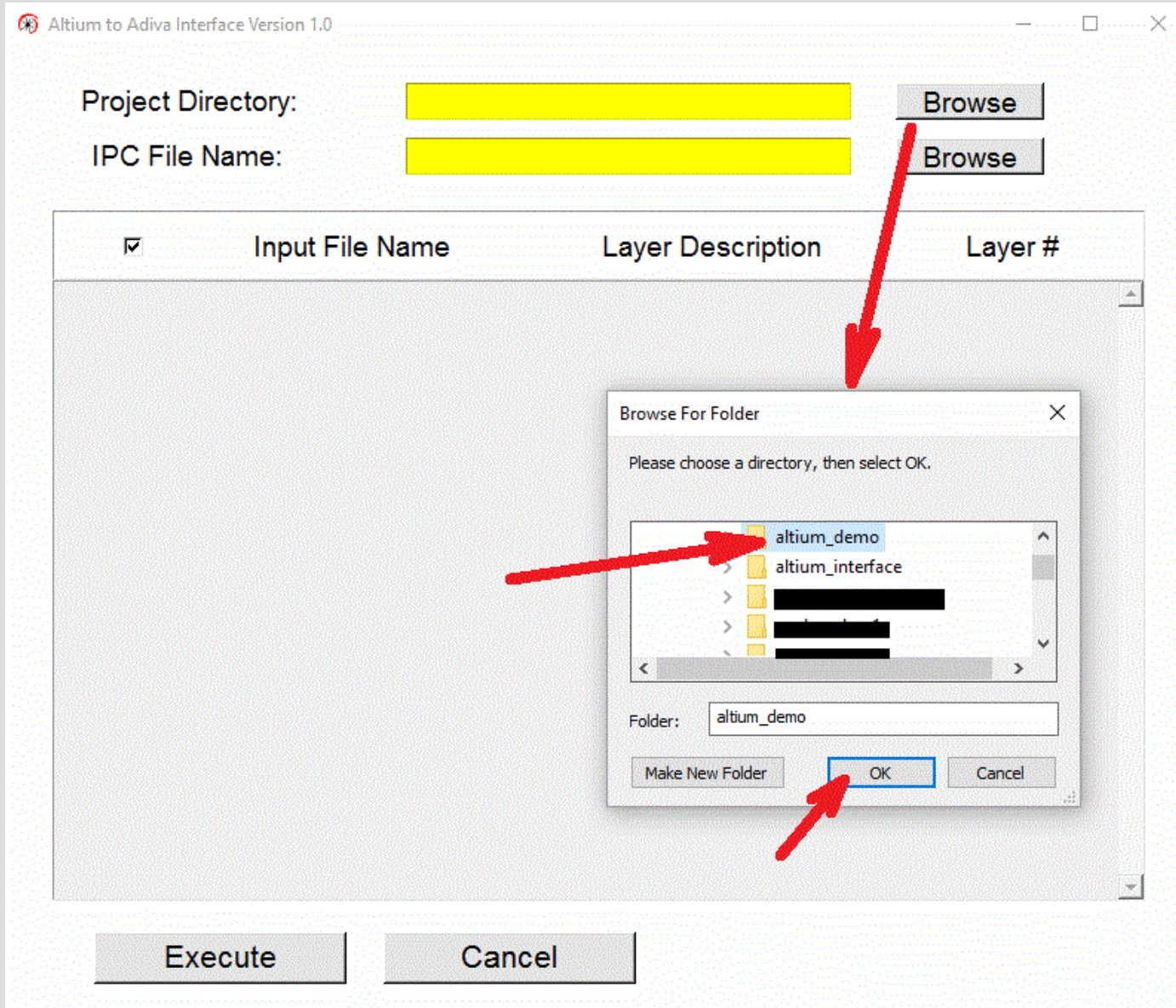
# Altium to Adiva Interface

Altium to Adiva Interface Version 1.0

Project Directory:

IPC File Name:

| <input checked="" type="checkbox"/> | Input File Name | Layer Description | Layer # |
|-------------------------------------|-----------------|-------------------|---------|
|-------------------------------------|-----------------|-------------------|---------|



Select **Browse** then choose the directory containing your input data – then **OK**

Project Directory:

C:/adiva\_customer/altium\_demo

Browse

IPC File Name:

altium.ipc

Browse

| <input checked="" type="checkbox"/> | Input File Name | Layer Description | Layer # |
|-------------------------------------|-----------------|-------------------|---------|
| <input checked="" type="checkbox"/> | altium.GTL      | Top               | 1       |
| <input checked="" type="checkbox"/> | altium.GP1      | Plane             | 2       |
| <input checked="" type="checkbox"/> | altium.G1       | Inner             | 3       |
| <input checked="" type="checkbox"/> | altium.GP2      | Plane             | 4       |
| <input checked="" type="checkbox"/> | altium.GP3      | Plane             | 5       |
| <input checked="" type="checkbox"/> | altium.G2       | Inner             | 6       |
| <input checked="" type="checkbox"/> | altium.GP4      | Plane             | 7       |
| <input checked="" type="checkbox"/> | altium.GBL      | Bottom            | 8       |
| <input checked="" type="checkbox"/> | altium.GTO      | TopSilk           | 9       |
| <input checked="" type="checkbox"/> | altium.GBO      | BotSilk           | 10      |
| <input checked="" type="checkbox"/> | altium.GTS      | TopMask           | 11      |
| <input checked="" type="checkbox"/> | altium.GBS      | BotMask           | 12      |

Execute

Cancel

Notice the Project Directory and IPC netlist name will display and the Gerber / Drill files contained will be listed and described / assigned automatically for Adiva

Project Directory:

C:/adiva\_customer/altium\_demo

Browse

IPC File Name:

altium.ipc

Browse

| <input checked="" type="checkbox"/> | Input File Name | Layer Description | Layer # |
|-------------------------------------|-----------------|-------------------|---------|
| <input checked="" type="checkbox"/> | altium.GTL      | Top               | 1       |
| <input checked="" type="checkbox"/> | altium.GP1      | Plane             | 2       |
| <input checked="" type="checkbox"/> | altium.G1       | Inner             | 3       |
| <input checked="" type="checkbox"/> | altium.GP2      | Plane             | 4       |
| <input checked="" type="checkbox"/> | altium.GP3      | Plane             | 5       |
| <input checked="" type="checkbox"/> | altium.G2       | Top               | 6       |
| <input checked="" type="checkbox"/> | altium.GP4      | Plane             | 7       |
| <input checked="" type="checkbox"/> | altium.GBL      | Inner             | 8       |
| <input type="checkbox"/>            | altium.GTO      | Bottom            | 9       |
| <input type="checkbox"/>            | altium.GBO      | TopSilk           | 10      |
| <input type="checkbox"/>            | altium.GTS      | BotSilk           | 11      |
| <input type="checkbox"/>            | altium.GBS      | TopMask           | 12      |

altium.GTO: BotSilk  
altium.GBO: TopMask  
altium.GTS: BotPaste  
altium.GBS: KeepOut  
altium.GTO: UserLayer

Execute

Cancel

Uncheck a file name to not convert a particular file into Adiva if desired. Change a layer's automatic description if also desired – but should not be necessary.

Project Directory:

C:/adiva\_customer/altium\_demo

Browse

IPC File Name:

altium.ipc

Browse

| <input checked="" type="checkbox"/> | Input File Name | Layer Description | Layer # |
|-------------------------------------|-----------------|-------------------|---------|
| <input checked="" type="checkbox"/> | altium.GTL      | Top               | 1       |
| <input checked="" type="checkbox"/> | altium.GP1      | Plane             | 2       |
| <input checked="" type="checkbox"/> | altium.G1       | Inner             | 3       |
| <input checked="" type="checkbox"/> | altium.GP2      | Plane             | 4       |
| <input checked="" type="checkbox"/> | altium.GP3      | Plane             | 5       |
| <input checked="" type="checkbox"/> | altium.G2       | Inner             | 6       |
| <input checked="" type="checkbox"/> | altium.GP4      | Plane             | 7       |
| <input checked="" type="checkbox"/> | altium.GBL      | Bottom            | 8       |
| <input checked="" type="checkbox"/> | altium.GTO      | TopSilk           | 9       |
| <input checked="" type="checkbox"/> | altium.GBO      | BotSilk           | 10      |
| <input checked="" type="checkbox"/> | altium.GTS      | TopMask           | 11      |
| <input checked="" type="checkbox"/> | altium.GBS      | BotMask           | 12      |

Execute

Cancel

Select **Execute** to begin the conversion process into **Adiva Design Analysis**

Selection Violation NetCmp Find

Net Compare  
Cad Netlist File:  Browse  
Execute

Net Compare Summary

Unmatched CAD Points: 0  
 Unmatched ADIVA Points: 0  
 Duplicate CAD Points: 0  
 Broken Nets: 2  
 Shorted Nets: 0

Report File:  Save

Qty ADIVA Net Netname

Show Errors Highlight

Pins

....Cad Netlist Compare Done.  
....Writing DRC\_altium\_demo.adi  
....Writing Done  
....Process Finished.  
Left mouse and drag between two points to pan.

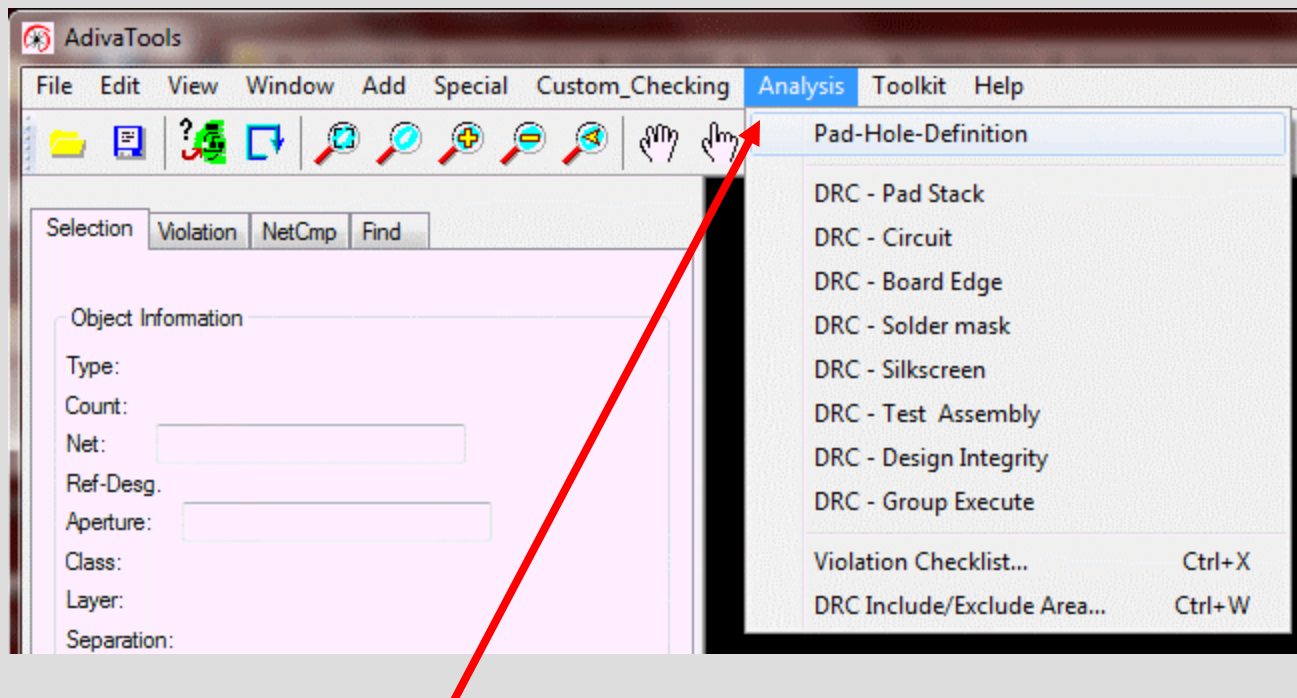
Ready Mode: Zoom Units: US Status: Ready X: 4.142264 Y: 3.757092 Distance:

| <input type="checkbox"/>            | S                                   | <input type="checkbox"/> | E                        | <input type="checkbox"/> | T                        | <input type="checkbox"/> | N                        | Description          |
|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1 Top Circuit        |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2 Plane              |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 3 Inner Circuit      |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 4 Plane              |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 5 Plane              |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 6 Inner Circuit      |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 7 Plane              |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 8 Bottom Circuit     |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 9 Top Marking        |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 10 Bottom Marking    |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 11 Top Mask          |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 12 Bottom Mask       |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 13 Top Paste         |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 14 Bottom Paste      |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 16 Non Plated Holes  |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 17 Plated Thru Holes |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 18 Buried Vias       |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 19 Buried Vias       |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 20 Top Cad           |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 21 Bottom Cad        |
| <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 22 Hole Cad          |

Adiva will automatically start, display the data, extract a netlist and present **CAD Netlist Compare** results for review.

One final item before DRC checking...

**Pad / Hole Definition** is needed to identify Pad and Hole types so that various checks can be run accurately. **Pad / Hole Definition** will group pads and holes to create virtual “padstacks” and assign them a code. This code will be used for DRC checking so that checks can identify what are vias, smt pads, fiducials, etc...



To get started, select **Analysis > Pad-Hole Definition** to start the function. A listing dialog will appear showing all of the holes and the pads they match with...



Review the “padstacks” that are created by zooming in on Layer 1  
 And selecting the “Seek” button for each Padstack Type. Watch the screen jump  
 to the next “seek”

**NOTE:** Only 1 or 2 “seeks” per padstack type is needed to determine if the  
 Default choice is correct.

Do a quick glance at each one, adjust if needed (usually not needed) then move on  
 to the next one – don’t let this process take more than a few minutes!

| Hole Size | Plating | TopPad Size   | BotPad Size | QTY | Class |      |
|-----------|---------|---------------|-------------|-----|-------|------|
| c10.00    | P       | c20.000000    | c20.000000  | 351 | V     | Seek |
| c10.00    | P       | c23.000000    | c23.000000  | 480 | V     | Seek |
| c12.00    | P       | c30.000000    | c30.000000  | 777 | V     | Seek |
| c12.00    | P       | r122.000000x1 | c30.000000  | 1   | V     | Seek |
| c12.00    | P       | c50.000000    | c30.000000  | 1   | V     | Seek |
| c138.00   | P       | c315.000000   | c315.000000 | 1   | P     | Seek |
| c15.00    | P       | c35.000000    | c35.000000  | 13  | V     | Seek |
| c213.00   | P       | c330.000000   | c330.000000 | 4   | P     | Seek |
| c31.50    | N       | c3.940000     | c3.940000   | 40  | T     | Seek |
| c37.40    | N       | c3.940000     | c3.940000   | 4   | T     | Seek |
| c39.37    | N       | c20.000000    | c20.000000  | 1   | T     | Seek |
| c39.37    | P       | c70.870000    | c70.870000  | 10  | P     | Seek |

Apply Cancel

If default choice requires  
 adjustment, adjust as needed  
 to one of the following options...

- V = Via
- S = SMT
- P = Pin -Thru hole
- C = Cosmetic (no real function)
- t = test point
- T = Non-Plated Hole
- F = fiducial

Select **Apply** to finish this  
 routine then **Save** your  
 Adiva database.

See DRC Checking User Guide for details in how to run DRC Checks and review results.

# (optional) Command Line details...

The Altium to Adiva Interface can also be command line driven to aid in personal scripting of the interface. This can be an interactive interface startup or a “black box” functionality relying on specific files to be available for conversion.

## Interactive Interface Startup:

On the command line, type the following...

```
>altium2adiva_5.0.pyw <dir_name>      ...or...  
>altium2adiva_5.0_metric.pyw <dir_name>
```

...where <dir\_name> is the name of the directory containing the input data files. This can be a direct subdirectory name or a path to the directory. The interface will open and list files as shown on page 8 awaiting user interaction.

## “Black Box” Startup:

On the command line, type the following with the added **-B** ...

```
>altium2adiva_5.0.pyw <dir_name> -B  ...or...  
>altium2adiva_5.0_metric.pyw <dir_name> -B
```

...where <dir\_name> is the name of the directory containing the input data files. This can be a direct subdirectory name or a path to the directory. The interface will read the input files from the directory and quietly build the Adiva database without user interaction.

**END**

**Altium to Adiva  
Interface  
(Quick-Start User Guide)**