ECAD Part Wizard

(EPW)

Help Document

ECAD Part Wizard application has been developed by RS Components and SamacSys to provide a range of highly accurate ECAD models, offering schematic symbol and PCB footprint information for electronic components.

ECAD Part Wizard (EPW) gives engineers full control over symbol fracturing including the number of fractures to be created and the placement of pins around each fracture.

Electronic component symbol & footprint information is contained within .epw files that can be downloaded directly from RS or component manufacture's websites worldwide. Required models can also be directly searched for from within the EPW application.

If models have not yet been created you can request them to be built for you from within EPW.

The ECAD Part Wizard is available free of charge, look out for the EPW icon:

Having customised the symbol's appearance, the symbol and footprint may be exported from EPW to any of the supported ECAD tool formats:

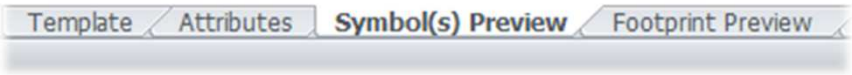
DS PCB · Altium Designer · Mentor Graphics · PULSONIX · TARGET 3001! · ZUKEN · cadence

Developed by: RS SamacSys

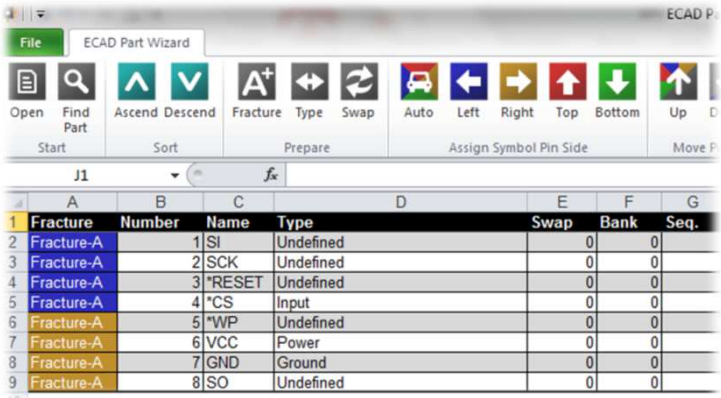
EPW Introduction

The EPW application is a Microsoft application and requires a copy of Excel (2007 or later) to run.

Once opened EPW displays four worksheets that allow the user to control and review the symbol and footprint for the required electronic component. Each worksheet is viewed by clicking the required tab along the bottom of the workbook:



The Template Worksheet



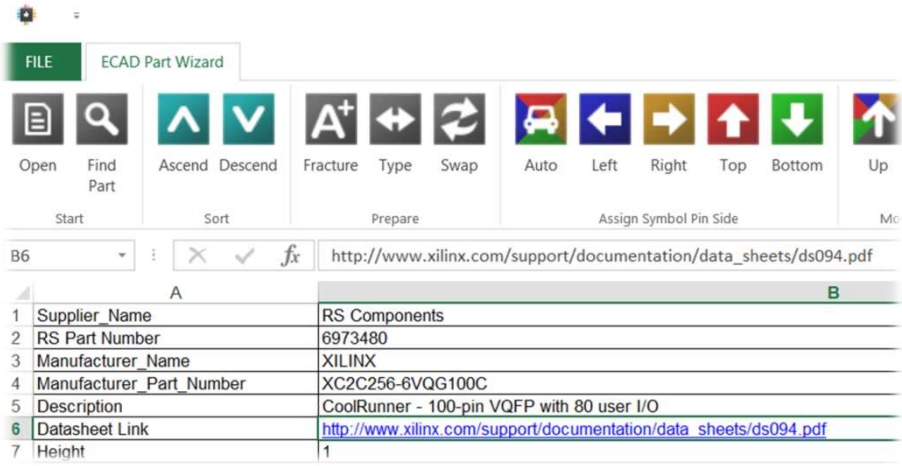
	A	B	C	D	E	F	G
1	Fracture	Number	Name	Type	Swap	Bank	Seq.
2	Fracture-A	1	SI	Undefined	0	0	
3	Fracture-A	2	SCK	Undefined	0	0	
4	Fracture-A	3	*RESET	Undefined	0	0	
5	Fracture-A	4	*CS	Input	0	0	
6	Fracture-A	5	*WP	Undefined	0	0	
7	Fracture-A	6	VCC	Power	0	0	
8	Fracture-A	7	GND	Ground	0	0	
9	Fracture-A	8	SO	Undefined	0	0	

What it does.

The Template worksheet gives the user control of how the symbol will be fractured, which pins will be assigned to which fracture, on which side of the symbol each pin will be displayed and in what order. These operations are performed by selecting the required pin rows and then selecting the required action from the ribbon bar. Standard Excel group selection features are available.

The Template worksheet is the only worksheet that is editable by the user.

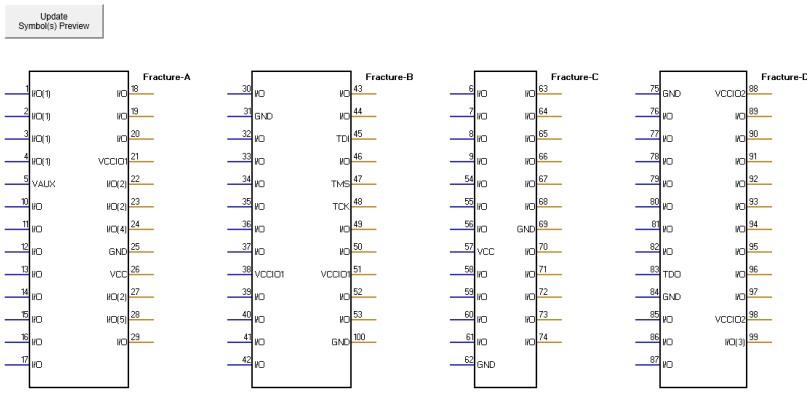
The Attributes Worksheet



	A	B
1	Supplier_Name	RS Components
2	RS Part Number	6973480
3	Manufacturer_Name	XILINX
4	Manufacturer_Part_Number	XC2C256-6VQG100C
5	Description	CoolRunner - 100-pin VQFP with 80 user I/O
6	Datasheet Link	http://www.xilinx.com/support/documentation/data_sheets/ds094.pdf
7	Height	1

The attributes worksheet displays the parametric data for the electronic component including a pdf link to the datasheet. This information cannot be edited by the user and will be exported to the chosen ECAD environment.

The Symbol Preview Worksheet

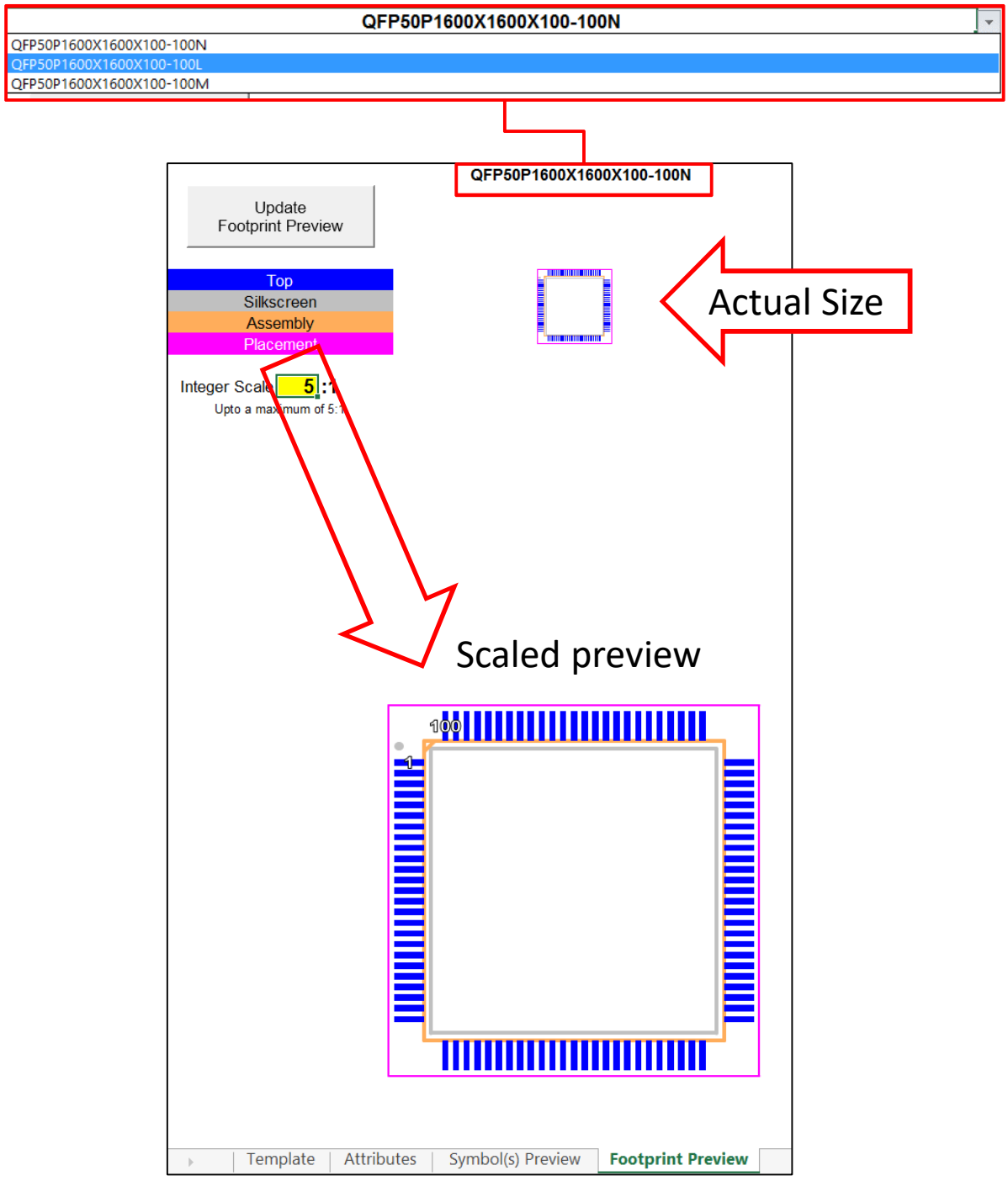


What it does.

Initially blank, this worksheet graphically displays the current fracturing, pin placement and pin ordering configuration described in the Template worksheet. Press the 'Update Symbols Preview' button to refresh. Any changes made to the Template worksheet will be reflected in the Symbol Preview Worksheet. The symbols displayed accurately reflect how they will appear in the ECAD tool once exported.

The Symbol Preview worksheet is not directly editable by the user.

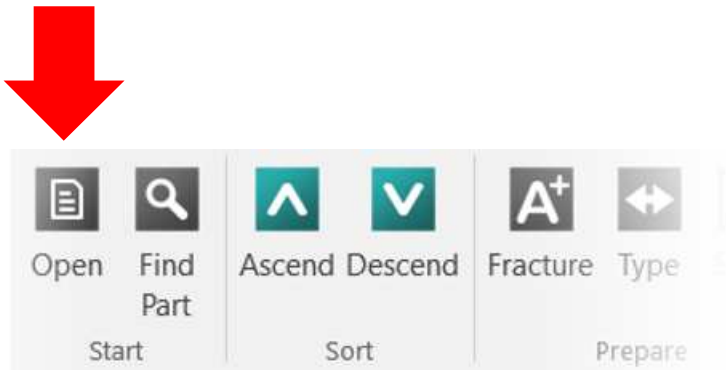
The Footprint Worksheet



The Footprint worksheet displays the component footprint that will be exported to the selected ECAD tool. All footprints are IPC compliant and are available in Least, Nominal and Maximum sizes. Each layer is colour coded and the footprint may be scaled for viewing purposes by entering an integer between 2-5 in the yellow background scale box.

The Displayed Footprints are not editable by the user.

The ‘Open’ Button

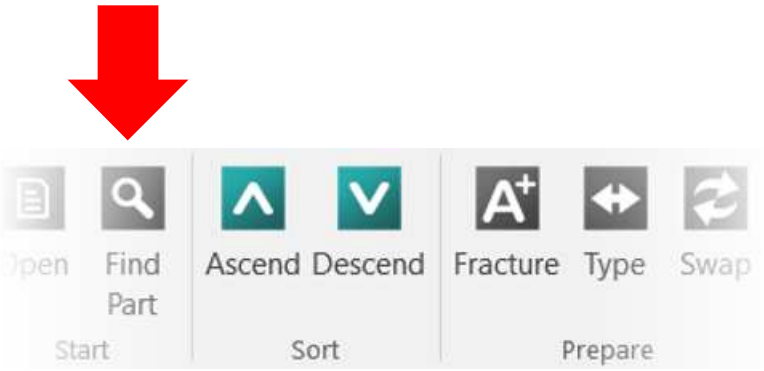


What it does.

This button opens a previously downloaded .epw file from websites such as RS, Product Data Library or component manufacturers. The ECAD Part Wizard (EPW) application uses information contained within the .epw file to create and populate the schematic symbol and footprint for the required electronic component. For each component there is a corresponding .epw file.

All available .epw files can also be found by using the ‘Find Part’ button described below.

The ‘Find Part’ Button

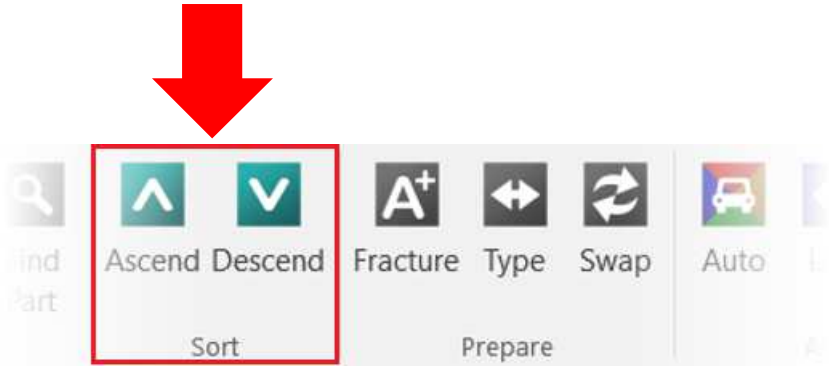


What it does.

This button searches the EPW database for the component model you need. The associated dialog box allows searching by Component manufacturer and part number. Once the required part has been found select ‘OK’ and the selected component will be loaded into EPW.

If the part doesn’t yet exist within the EPW database use the ‘Request’ button to have it built for you – free of charge.

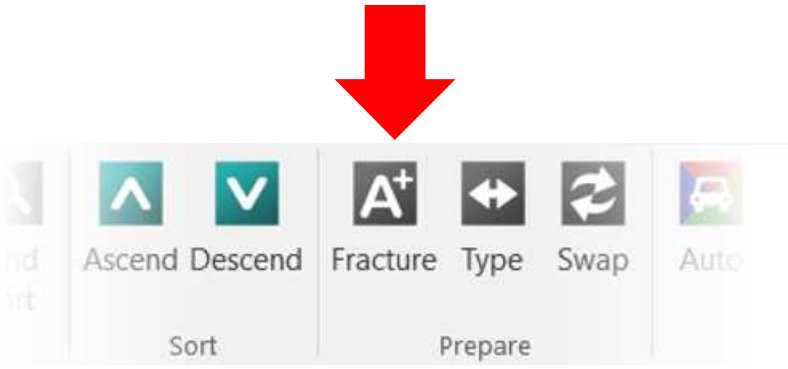
The ‘Ascending’ & ‘Descending’ Buttons



What they do.

The ascending and descending buttons sort the pin rows based upon the column selected. This feature groups related pins together offering easier viewing and fracturing. You need to select the column heading to be able to sort it.

The ‘Fracture’ Button

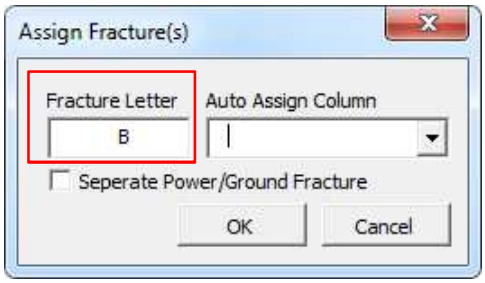


What it does.

The fracture button splits a single graphical symbol into a user specified number of smaller graphical symbols, dividing the pins between them. This feature is very useful for large pin count devices where it is inconvenient to display the component as a single large symbol in the ECAD tool.

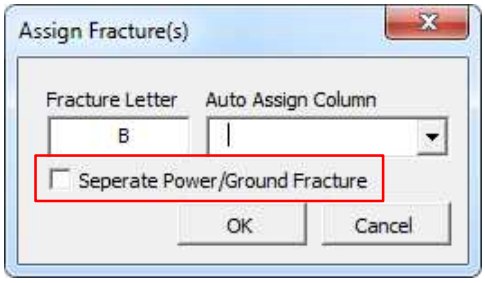
Clicking the Fracture button brings up the Assign Fracture dialog box.

The ‘Assign Fracture(s)’ Dialog



What this does.

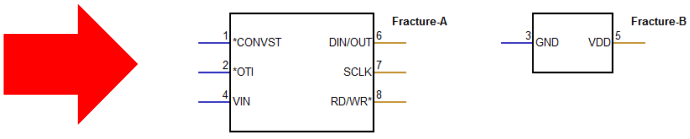
Pins may be manually assigned to a fracture by group selecting them from the fracture column (left mouse click and drag or control-click) and allocating a fracture letter.

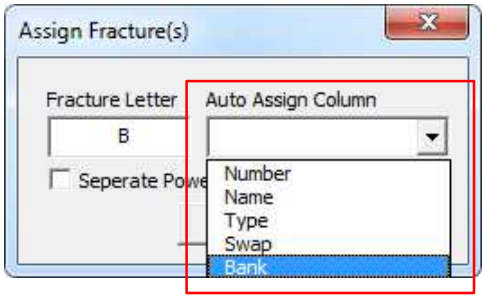


What this does.

Ticking the Separate Power/Ground Fracture box creates a separate fracture for the Power & Ground pins.

Fracture	Number	Name	Type	Swap	Bank	Seq.
Fracture-A	1	*CONVST	Undefined	0	0	
Fracture-A	2	*OTI	Undefined	0	0	
Fracture-A	4	VIN	Input	0	0	
Fracture-A	6	DIN/OUT	Output	0	0	
Fracture-A	7	SCLK	Input	0	0	
Fracture-A	8	RD/WR*	Undefined	0	0	
Fracture-B	3	GND	Ground	0	0	
Fracture-B	5	VDD	Power	0	0	

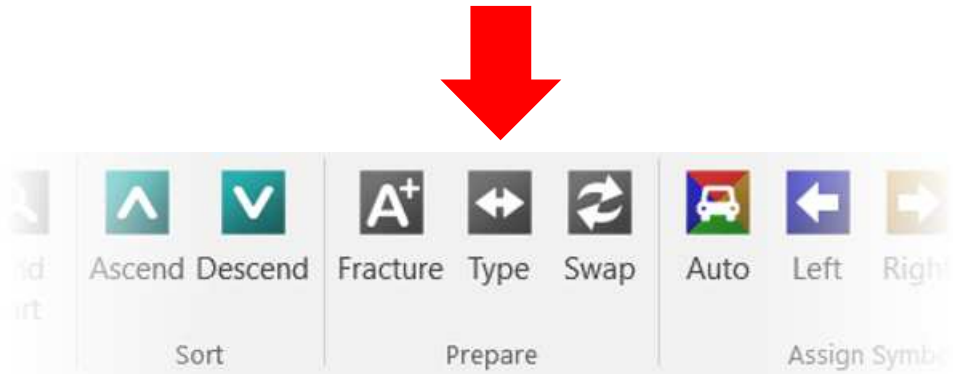




What this does.

The Auto Assign Column creates fractures based on values from one of the other columns. Devices are frequently fractured by bank, resulting in each bank of pins having its own fracture.

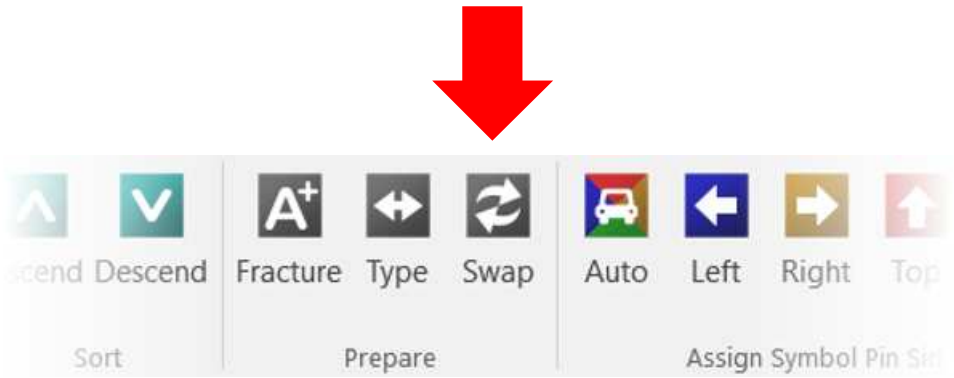
The ‘Type’ Button



What this does.

The user may change or assign the type of each pin by selecting the required pin row and clicking the type button. Pin type may also be changed by using the drop down combo box next to each pin in the Type column.

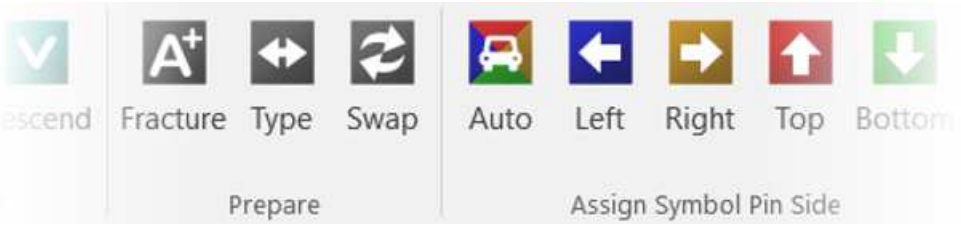
The ‘Swap’ Button



What it does.

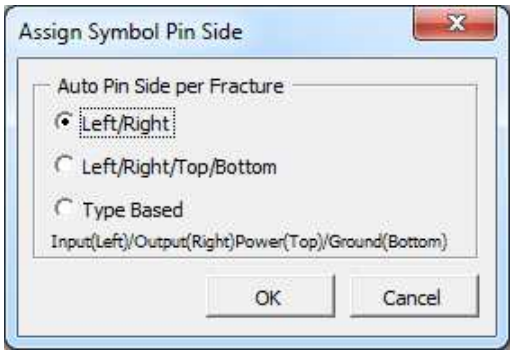
The swap number of each pin may be changed by selecting the required pin row and clicking the Swap button. Not all ECAD systems support this method of pin swapping.

The ‘Auto’ Button



What this does.

The Auto button automatically distributes pins around fractures as follows:



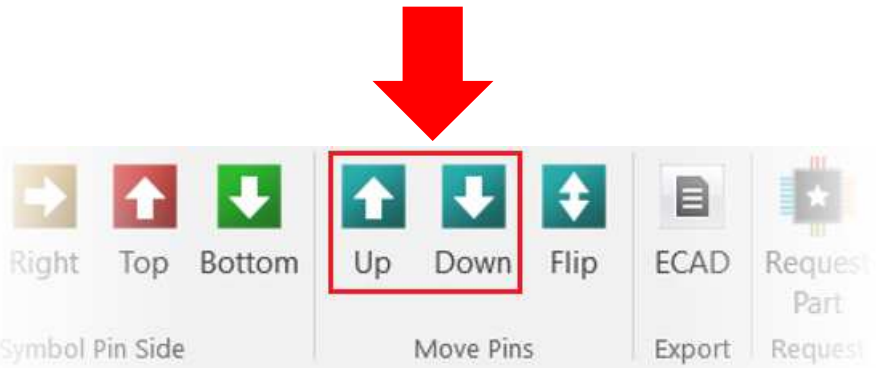
What this does.

Note that the selected assignment will be applied across all fractures.

What they do.

These buttons control on which side of the symbol pins will appear. Select the required pin(s) on the template worksheet and then click the appropriate button to make the change. The background colour of the pin(s) indicates the side of the symbol on which the pin will appear.

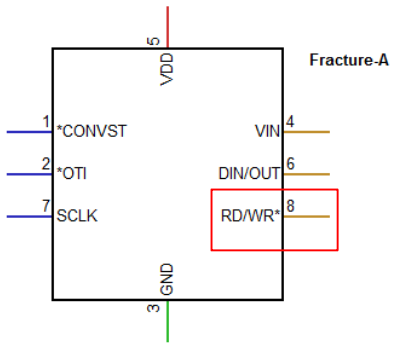
The ‘Up’ and ‘Down’ Buttons



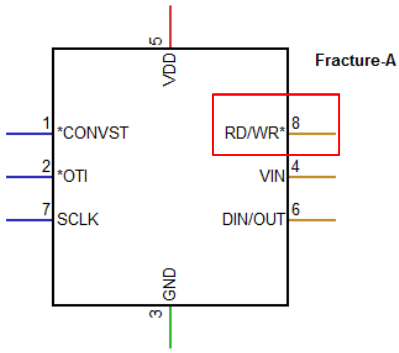
What they do.

To change pin positions along any side of a symbol select the pin to be moved on the template worksheet and click the up / down buttons to move the pin to the desired position. Pins will appear on the symbol in the order in which they are listed in the Fracture column.

Fracture	Number	Name	Type	Swap	Bank	Seq.
Fracture-A	1	*CONVST	Undefined	0	0	
Fracture-A	2	*OTI	Undefined	0	0	
Fracture-A	7	SCLK	Input	0	0	
Fracture-A	4	VIN	Output	0	0	
Fracture-A	6	DIN/OUT	Output	0	0	
Fracture-A	8	RD/WR*	Undefined	0	0	
Fracture-A	5	VDD	Power	0	0	
Fracture-A	3	GND	Ground	0	0	

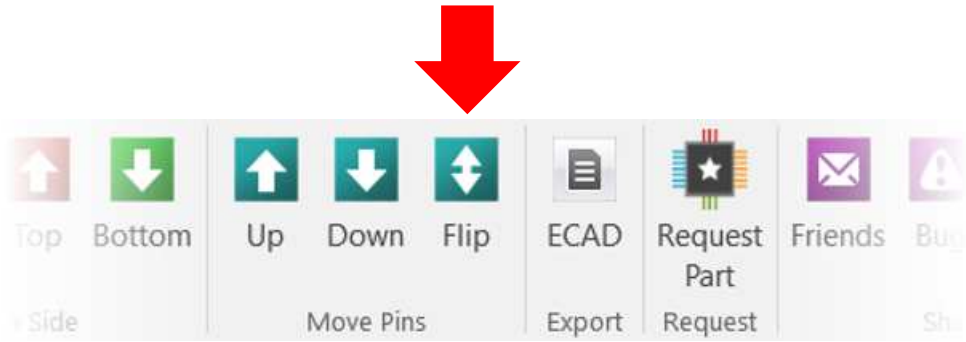


Fracture	Number	Name	Type	Swap	Bank	Seq.
Fracture-A	1	*CONVST	Undefined	0	0	
Fracture-A	2	*OTI	Undefined	0	0	
Fracture-A	7	SCLK	Input	0	0	
Fracture-A	8	RD/WR*	Undefined	0	0	
Fracture-A	4	VIN	Output	0	0	
Fracture-A	6	DIN/OUT	Output	0	0	
Fracture-A	5	VDD	Power	0	0	
Fracture-A	3	GND	Ground	0	0	



As you can see above, by pressing the ‘up’ button we have moved pin number 8 from the bottom to the top of the right hand side of the fracture.

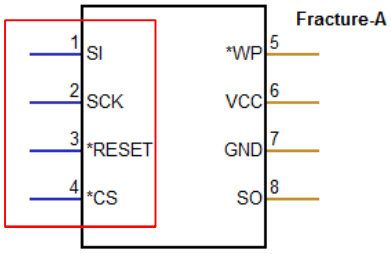
The ‘Flip’ Button



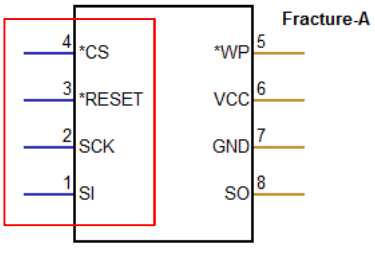
What it does.

The Flip function reorders the selected pin rows putting the pin that was at the top of the selected group at the bottom and the bottom pin at the top of the selected group. All intermediate pin rows in the selected group are correspondingly flipped in turn. Flipping the same group of pins twice will return them to their original positions.

Fracture	Number	Name	Type	Swap	Bank	Seq.
Fracture-A	1	SI	Undefined	0	0	1
Fracture-A	2	SCK	Undefined	0	0	2
Fracture-A	3	*RESET	Undefined	0	0	3
Fracture-A	4	*CS	Input	0	0	4
Fracture-A	5	*WP	Undefined	0	0	5
Fracture-A	6	VCC	Power	0	0	6
Fracture-A	7	GND	Ground	0	0	7
Fracture-A	8	SO	Undefined	0	0	8

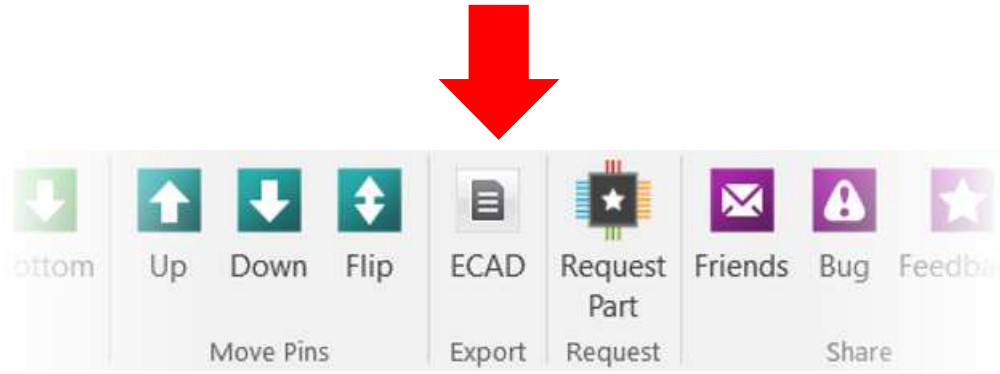


Fracture	Number	Name	Type	Swap	Bank	Seq.
Fracture-A	4	*CS	Input	0	0	4
Fracture-A	3	*RESET	Undefined	0	0	3
Fracture-A	2	SCK	Undefined	0	0	2
Fracture-A	1	SI	Undefined	0	0	1
Fracture-A	5	*WP	Undefined	0	0	5
Fracture-A	6	VCC	Power	0	0	6
Fracture-A	7	GND	Ground	0	0	7
Fracture-A	8	SO	Undefined	0	0	8



As you can see above, by pressing the ‘flip’ button we have inverted the display order of the pins on the left hand side of the symbol.

The ‘ECAD’ Button

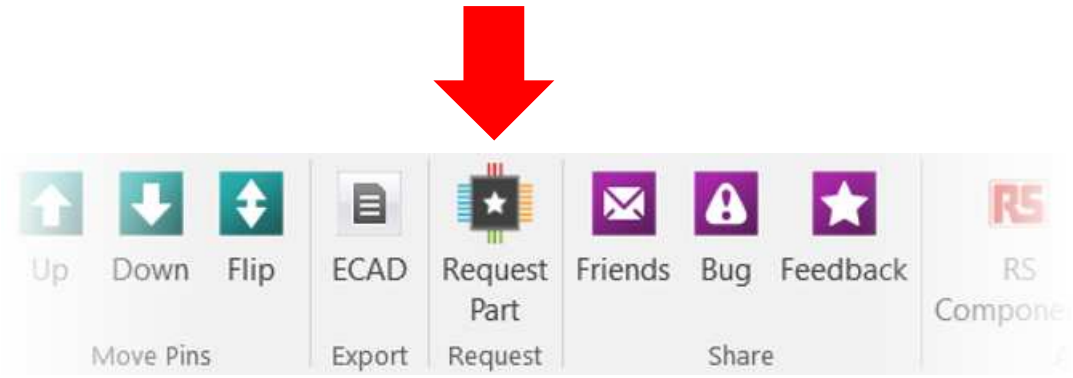


What it does.

The ‘ECAD’ button exports the schematic symbol and PCB footprint to the PCB Design System of your choice. All user defined fracturing, pin type and pin ordering will be preserved within the target ECAD system. DesignSpark PCB, Mentor Graphics, Altium Designer, Cadence and Zuken CADSTAR are all supported.

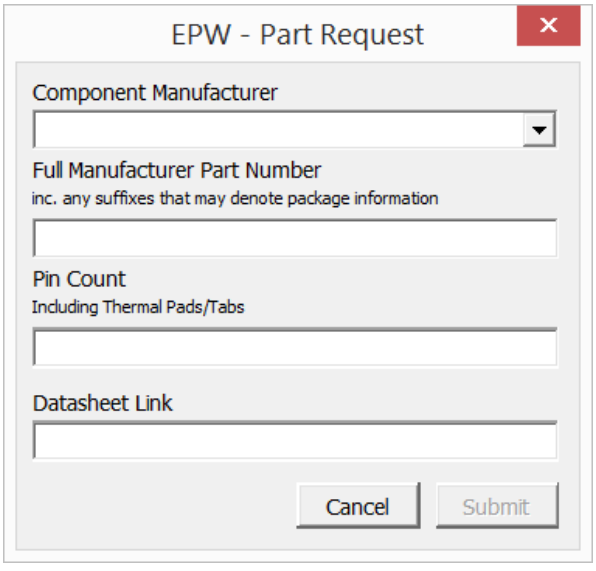
DS PCB · Altium Designer · Mentor Graphics · PULSONIX · TARGET 3001! · ZUKEN · cadence

The ‘Part Request’ Button



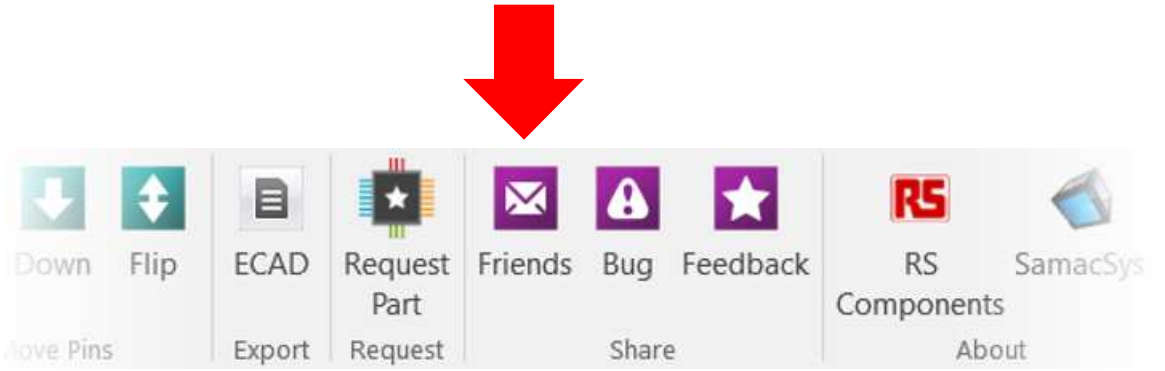
What it does.

Should you require a component model we do not currently support please request it. Requested models become available asap from within the find part function.



Please fully complete the part request form to ensure we create the correct part. The finished model and status updates will be emailed to the address given under the ‘User Details’ button. When you receive notification that your model is ready it will be available through the ‘Find Part’ button.

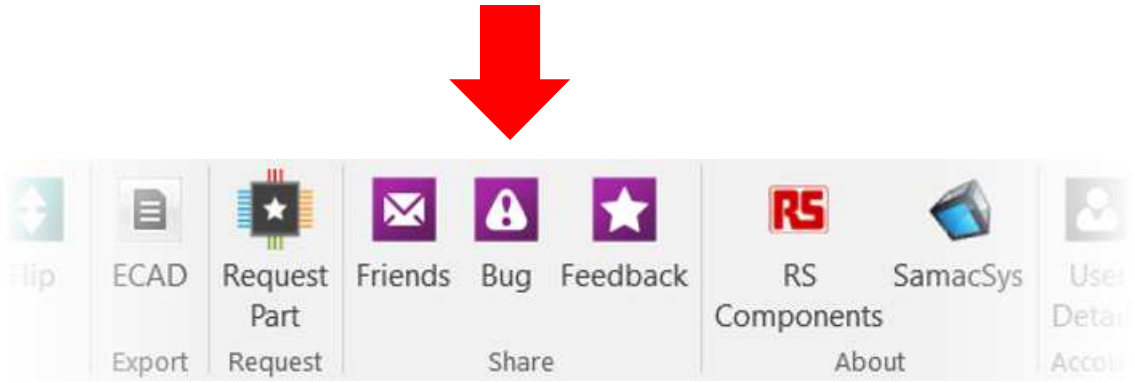
The ‘Friends’ Button



What it does.

If you like EPW and would like to tell your friends & colleagues please click this button. The email contains a link to our website where they can find more information. By sharing our software with others you can make other electronic engineers’ lives easier!

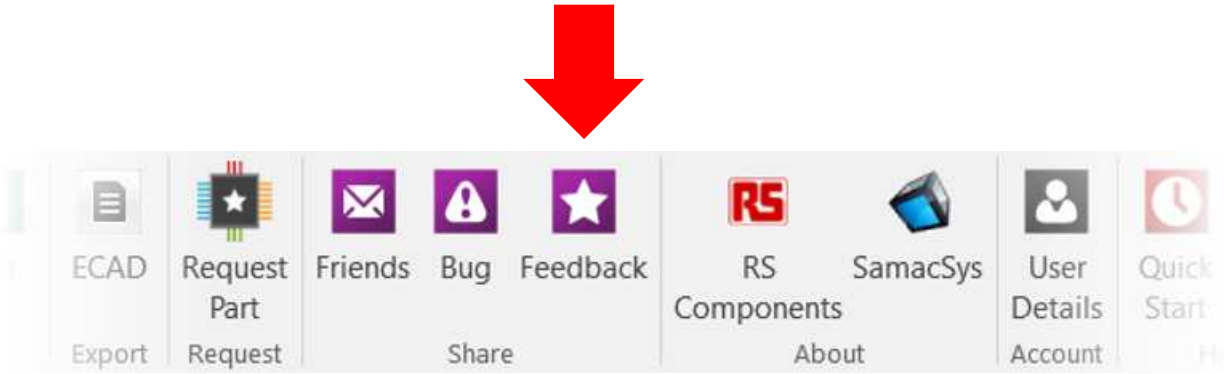
The ‘Bug’ Button



What it does.

If you notice a bug with either the application or with one of our component models please let us know immediately. Quality is very important to us and we promise to investigate promptly. Notification of new model versions are automatically emailed to all users that have downloaded previous versions.

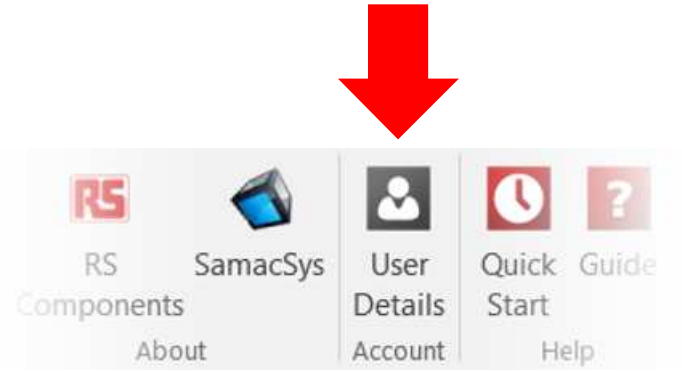
The ‘Feedback’ Button



What it does.

We’d love to hear what you have to say about EPW. The Feedback button will take you to our website where you can leave your thoughts and comments. If there is anything that you think we could improve or something you’d like to see in EPW then don’t hesitate to let us know.

The ‘User Details’ Button



What it does.

Please enter your details here. We use this information to inform you updates to models and new versions of the EPW application.

Have a DesignSpark ID? Enter it here.