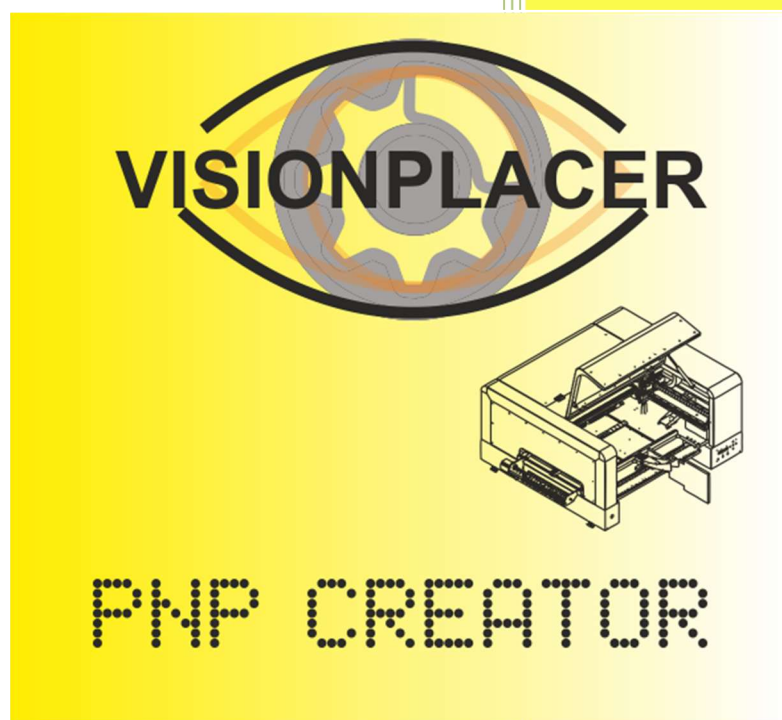


**2021**

# PNP-Creator Manual



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SMALLSMT [www.smallsmt.biz](http://www.smallsmt.biz)

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## 1. End-User License Agreement of PNP-Creator

This End-User License Agreement ("EULA") is a legal agreement between you and SMALLSMT

This EULA agreement governs your acquisition and use of our PNP-Creator software ("Software") directly from SMALLSMT or indirectly through a SMALLSMT authorized reseller or distributor (a "Reseller").

Please read this EULA agreement carefully before completing the installation process and using the PNP-Creator software. It provides a license to use the PNP-Creator software and contains warranty information and liability disclaimers.

If you register for a free trial of the PNP-Creator software, this EULA agreement will also govern that trial. By clicking "accept" or installing and/or using the PNP-Creator software, you are confirming your acceptance of the Software and agreeing to become bound by the terms of this EULA agreement.

If you are entering into this EULA agreement on behalf of a company or other legal entity, you represent that you have the authority to bind such entity and its affiliates to these terms and conditions. If you do not have such authority or if you do not agree with the terms and conditions of this EULA agreement, do not install, or use the Software, and you must not accept this EULA agreement.

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SMALLSMT hereby grants you a personal, non-transferable, non-exclusive license to use the PNP-Creator software on your devices in accordance with the terms of this EULA agreement.

You are permitted to load the PNP-Creator software (for example a PC, laptop, mobile or tablet) under your control. You are responsible for ensuring your device meets the minimum requirements of the PNP-Creator software.

You are not permitted to:

- Edit, alter, modify, adapt, translate, or otherwise change the whole or any part of the Software nor permit the whole or any part of the Software to be combined with or become incorporated in any other software, nor decompile, disassemble, or reverse engineer the Software or attempt to do any such things
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SMALLSMT reserves the right to grant licenses to use the Software to third parties.

## **Termination**

This EULA agreement is effective from the date you first use the Software and shall continue until terminated. You may terminate it at any time upon written notice to SMALLSMT.

It will also terminate immediately if you fail to comply with any term of this EULA agreement. Upon such termination, the licenses granted by this EULA agreement will immediately terminate and you agree to stop all access and use of the Software. The provisions that by their nature continue and survive will survive any termination of this EULA agreement.

## **Governing Law**

This EULA agreement, and any dispute arising out of or in connection with this EULA agreement, shall be governed by and construed in accordance with the laws of China and Germany.

## 2. Introduction

This software is used for work preparation and data management. It uses placement data, Gerber data and feeder data to be processed in a project. After creating a successful feeder assignment and building the feeder file, everything is exported again. The feeder file and SMT file are then loaded into our V2 software to make final adjustments. SMT files and feeder files can be synchronized by re-importing them when changes are made in the VisionPlacer V2 software.

Reports can be printed to document and set up the machine. From version 1.07 we support project information that allows up to 8 images and one comment field per variant, and one set for the project. This data is included in the SMT report.

### Limitations:

- Components in the database can only be assigned to one feeder at a time, as the package database in the VisionPlacer V2 software already makes a package to feeder type assignment.
- The feeder database can currently hold 9999 feeders

## 3. Application Settings Dialog

### Machine type selection

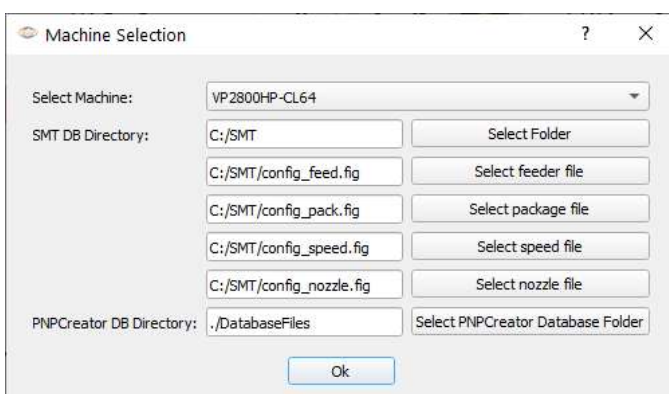
After first software start the machine selection dialog appears automatically. We need this setting to apply feeder bay general angle offset for CL feeder bays on different machines.

### Database file directory locations

The second option “DB Directory” is used to point to V2 software location for direct access to speed data, nozzle settings, feeder configuration and work directory for exported SMT files.

The system use “C:\SMT\work” as export path for SMT files.

Backups of feeder database “config\_feed.fig” will get copied to the “\backup” folder by adding a time stamp.



Assign your V2 software database locations by click on “Select Folder” button.

The feeder, package, speed, and nozzle database folder could be assigned in the next 4 fields.

Feeder and components database can be stored on external folders too.

## 4. Main User Interface UI description

The screenshot shows the PNP-Creator V1.05 software interface. Red arrows point to the following elements:

- Menu and Toolbar:** Located at the top left, containing buttons for Import, Export, and Restore in the Feeder DB section, and Appearance, Zoom, and View sections.
- Feeder Dock:** A panel on the left showing a table of feeder groups and components.
- GERBER view:** A central workspace displaying a PCB layout with various components and feeders.
- Show file path list:** A panel at the bottom left showing a list of files and folders.
- Project Tab:** A tab at the top right showing project overview statistics.
- Variants Tab:** A tab at the top right showing variant-specific settings.
- PNP data Tab:** A tab at the top right showing a table of PNP data.

### Main Tool Bar

<p><b>Feeder DB</b></p> <p>Import</p> <p>Export</p> <p>Restore</p>	<ul style="list-style-type: none"> <li>• Import feeder database from assigned SMT folder.</li> <li>• Export current project feeder database to SMT folder and save destination database to backup folder.</li> <li>• Restore copies previous saved feeder database from backup to SMT folder again.</li> </ul>
<p><b>Appearance</b></p> <p><input type="checkbox"/> Select Bottom Layer</p> <p>Scale - X: 1,0000</p> <p>Scale - Y: 1,0000</p> <p>Update view</p>	<p>GERBER layer selection to assign to selected variants tab.</p> <p>PNP data scaling assignment to all variants. After scaling applied use "Update view" button to redraw GERBER view. Scaling applied to export file only!</p>
<p><b>Zoom</b></p> <p>+</p> <p>1x</p> <p>-</p>	<p>Zoom function for GERBER view.</p>
<p><b>View</b></p> <p><input type="checkbox"/> Hide Feeder Dock</p> <p><input type="checkbox"/> Hide PNP Dock</p> <p><input type="checkbox"/> Allow PNP Dock Shrinking</p> <p><input type="checkbox"/> Allow Feeder Dock Shrinking</p>	<p>Visibility switches for feeder and PNP dock.</p> <p>Increasing size of dock is always possible but if you want to reduce width again you need to enable shrinking check box.</p>
<p><b>Layer Visibility</b></p> <p><input type="checkbox"/> Show Gerber Layer</p> <p><input checked="" type="checkbox"/> Show Gerber Pad Layer</p> <p><input checked="" type="checkbox"/> Show Gerber Overlay Layer</p>	<p>Layer visibility check boxes for GERBER view.</p>
<p><b>Project Overview</b></p> <p>Total Component Count: 179</p> <p>Total Component Assigned Feeder Count: 99</p> <p>Total Component With Mount-ON Count: 99</p> <p>Total Component With THT-ON Count: 6</p>	<p>Project data overview</p>



## File Path List

<p>QTPnpCreator</p> <p>Top File: C:/QTdevelopment/QTPnpcreator/release/Work/Petcam_V1/PetCam_REV5.GTL          Top Pad File: C:/QTdevelopment/QTPnpcreator/release/Work/Petcam_V1/PetCam_REV5.GPT          Top Gerber Overlay File: C:/QTdevelopment/QTPnpcreator/release/Work/Petcam_V1/PetCam_REV5.GTO          Bot File:          Bot Pad File: C:/QTdevelopment/QTPnpcreator/release/Work/Petcam_V1/PetCam_REV5.GBP          Bot Gerber Overlay File: C:/QTdevelopment/QTPnpcreator/release/Work/Petcam_V1/PetCam_REV5.GBO          Feeder File: C:/QTdevelopment/QTPnpcreator/release/Work/Petcam_V1/config_feed_3g.fig</p>	File Path list for imported GERBER and PNP file's locations.
--	--

## 5. Feeder Browser Dock Widget









The feeder browser dock widget manages all mechanical feeder slot data and allows to assign and edit feeder data. If multi windows setup used the feeder widget can be undocked from main window to increase space for GERBER window. External Feeder files can be imported and edited and finally exported again for V2 software use.

Slot	Feeder	Component
W1	F 2 Integration Feed	FB2K2
W2	F 3 Integration Feed	110K
W3	F 4 Integration Feed	100n
W4	F 5 Integration Feed	33p
W5	F 6 Integration Feed	220p
W6	F 7 Integration Feed	1nF
W7	F 8 Integration Feed	1uF
W8	F 9 Integration Feed	SI_2A
W9	F 10 Integration Feed	4,7uF
W10	F 11 Integration Feed	10uF/35V
W11	F 12 Integration Feed	6R8
W12	F 13 Integration Feed	RR264MM

## Feeder Group Buttons

Feeder groups used to keep separate feeder sets in one feeder file. Only one set can get activated and is valid for PNP processing. This dialog allows to add / edit / copy and select feeder groups.



  Add feeder group		Add new feeder group to feeder file. This step can be used to copy complete feeder set from another feeder group too.
Basic Feeder Group		Select feeder group used for project.
  Edit feeder group		Edit currently selected feeder group
 Delete feeder group		Delete feeder group and it is assigned feeder set.

## Feeder Browser Options



- Sorting by column is started if click to column header.
- Column width get adjusted by dragging column border.

All adjustments will be saved to global application settings and restored during application loading!

### Feeder Slot editor

It handles the unique feeder ID and pickup position plus drag feeder arm position. These mechanical data normally assigned and edited in V2 software. If Edit parameters check box enabled, you can update positions here too. Feeder assignment and component assignment edited here. If you want to free feeder slot from assignment again use the Unassign button.



Opened by clicking on edit button in first column.

Unique feeder index built by feeder position and index. [W,N,E,S,G) + ( 1...)		
Feeder pickup position normally locked and imported		
Push feeder arm coordinate imported		
Enable pick up and push feeder arm coordinates changing.		Button to delete feeder assignment
Assign feeder from database button		
Edit assigned feeder button		Edit assigned component button

### Feeder Group Filter

	<ul style="list-style-type: none"> <li>• Switches selects which feeder sides (groups) are shown in feeder browser.</li> <li>• Show only project feeders limits feeder to project used only.</li> <li>• Show only conflicting feeder only show feeders that have warnings.</li> </ul>
--	--

### Direct Feeder assignment editor

This is the normal way to simply select and assign a feeder from database to feeder slot position. The software cares the additional part angle offset depending on feeder mounting position. The machine selection to know the physical feeder location on machine was done on the first startup or you can find in settings menu. Only CL feeder can be assigned to modular feeder positions in range of S1 – S64. All other feeders can use West, North and East feeder positions.

F 51 Integration Feed ▼ ←

Opened by clicking on assignment button in second column





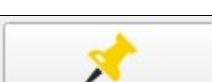
Column and dialog width is adjustable and get saved and restored to project.	
Feeder list can get sorted by clicking on column header	
Feeder type icon	
Search field working on part value	
Feeder type filter options for grid view	

### Feeder type icon description

	Drag feeder
	Push feeder
	Vibration feeder
	Grid feeder
	Cassette feeder (CL feeder)

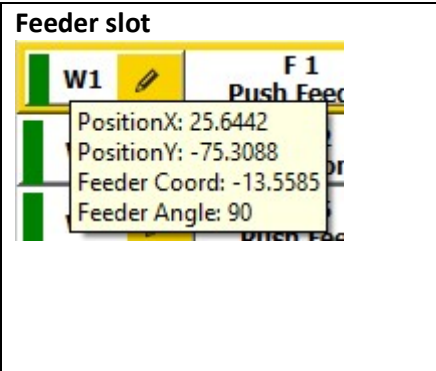
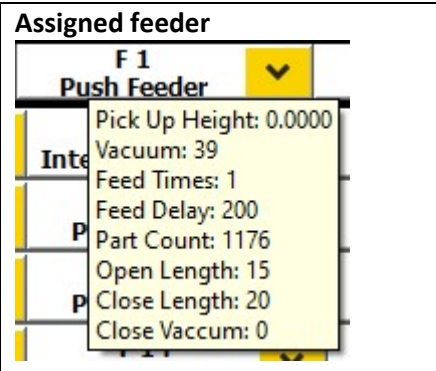
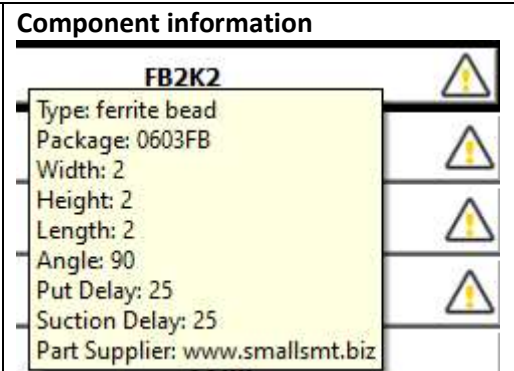
### Feeder Buttons



	The plus button adds feeder entry if previous step feeder group defined. Short key is CTRL and +
	Edit slot for selected feeder button
	Delete feeder entry button
	The sync button updates feeder and components database. Component data is edited only in the feeder slot first. If you want to update components database, you need to use the sync button.
	Feeder assignment flag filter function. If button clicked only feeders flagged if use in currently selected variant. If enabled feeders used in any variant get flagged.

### Mouse over information in feeder dock window

During mouse over field in feeder slot, feeder, or component column a context information appears.


Feeder slot	Assigned feeder	Component information
		

### Feeder assignment warning Icon

	<p>If part value &lt;&gt; feeder value, the “Assignment Warning Icon” appears. Move mouse over icon and a list showing all conflicted parts appears. <b>This function is for information only and has no influence on application operation!</b></p>
--	--


### Global feeder data update from databases

If data edited locally in feeder slot it writes data back to global databases after closing dialogs.

Use Feeder Sync Button  to update feeder slots using global database settings.

### Feeder used status Flag

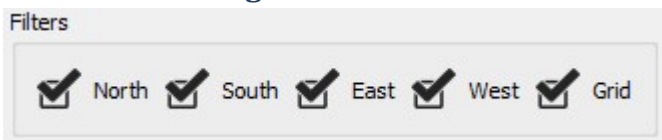
We have 2 options to update feeder used in project state. All feeders on green state are assigned to variants, red state are free feeders.

 First option handles feeder used flags globally to show common feeder state over all variants.

 Second option if pin button is grey only feeders assigned to current selected variant are flagged.

This option has influence to feeder report too.

### Feeder Filter Flags



The feeder filter flags restrict the list range to the selected physical feeders.

Uncheck Flag to suppress selected feeder type.

Same flags can be found in assignment slot dialog.



## 6. Print Settings Dialog

The print settings dialog allows to customize report by changing colors and amount of information reported.

### PNP and SMT Report Settings

Report type selection		Layer color assignment
Data fields used in report selection		Adjust marking sizes
		Copy settings to global defaults
Hide dialog if print started switch		
		GERBER pad layer visible switch

### Feeder Report Settings

Report type selection		If selected print only current feeder group
Data fields used in report selection		

### Report Settings [Cover Page]

**Report page settings selector**

**Margin settings**

**Upload Logo file (PNG, JPG, BMP)**

**Print font definition**

**Page preview**

### Report Settings [Normal Page]

**Report page settings selector**

**Margin settings**

**Company information fields**

**Print font definition**

**Page preview**



## 7. PNP Data / Variant List Grids

On the right side of our application, you find the PNP data and variant lists. After importing PNP data the first tab filled with PNP data. We can manage top and bottom side data. For SMT file export you need to create even one variant and assign top or bottom side to it.

PNP data function buttons		Undock PNP data widget switch
PNP and variant data tabs		Automated management for mount flags
Search field selector		Part visibility selector to show all parts or SMT parts only or THT parts only
PNP data grid sortable and columns adjustable		Search field

### PNP Data Function Buttons

	Add new line to PNP or Variants data grid and open data editor. Shortcut: CTRL & plus key
	Edit part from selected line. Shortcut: Enter key
	Copy selected part Shortcut: CTRL & C
	Paste part at the end of the list Shortcut: CTRL & V
	Delete part from selected line Shortcut: CTRL & minus key
	Sort data by import index button
	Automatic feeder assignment match field is "Part Value" and all 3 part name alias fields.
	Clear row selection

## Search Field Selector



Click on the icon to open the context menu. Now we select data field for search line.

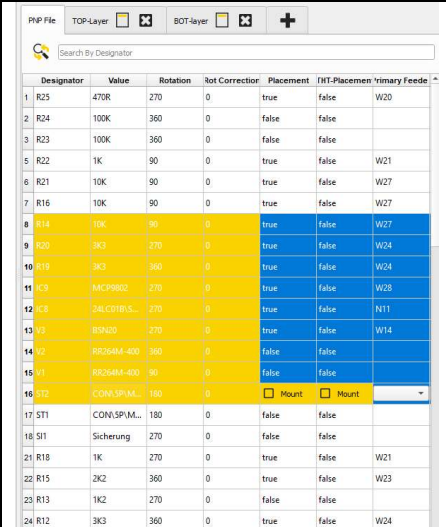


## Sorting in data grids

Each column header can be clicked to sort by column.

To return to imported order use the sort data by index button.

## Deleting Data



Select multiple or single lines and click on delete button to delete. Take care there is no undo function!

## Adjusting column width and sort order

By clicking on column header grids get sorted by column.

Adjusting width by dragging column borders possible. All setting saved and restored during loading project again.

To restore sorting by import index, use the "Sort data by import index button" in toolbar.

## Editing Data and assigning Feeder

We have 2 editing modes the first one is single line editor. It is used to edit data within selected data line.

If multiple lines selected, we could assign feeder to it or update MOUNT and THT flag.

	Feeder	Value	Part type
1	W1	300R	ferrite bead
2	W2	100nF63V	capacitor
3	W3	100nF	capacitor
4	W4	33p	capacitor
5	W5	220p	capacitor
6	W6	1nF	capacitor
7	W7	1uF	capacitor
8	W8	SI_2A	polyfuse
9	W9	4,7uF	capacitor
10	W10	10uF/35V	capacitor
11	W11	6R8	resistor
12	W12	RR264MM	diode
13	W13	ADA4505	IC
14	W14	BSN20	transistor
15	W15	BZX384_3V3	diode
16	W16	18.432MHz	crystal
17	W17	BAW56	diode
18	W18	PESD0603-240	resistor
19	W19	120R	resistor
20	W20	470R	resistor

During feeder assignment the grid can change sorting by column header click.  
After selecting line, the grid close and feeder get assigned to selected part data lines.

**Edit Part** ? X

Index:

Designator:

Value:

MidX:  mm

MidY:  mm

Primary feeder:

Primary feeder value:

Secondary feeder:

Secondary feeder value:

Rotation:

Rotation Correction:

Top/Bottom:

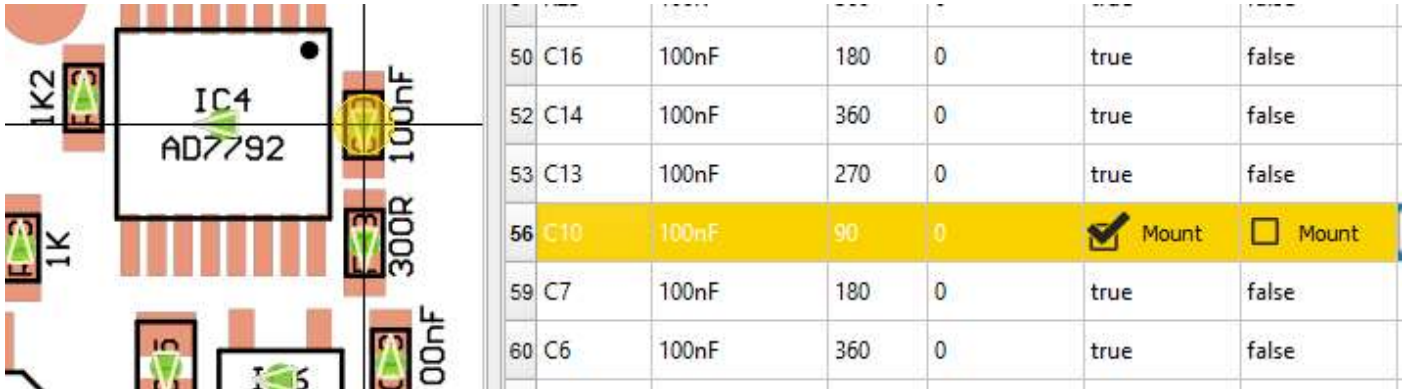
Enable Placement

Enable THT-Placement

Part data editor is shown after selecting data line and starting edit function.  
All imported PNP data can be edited.  
Enable placement will toggle mount flag in V2 software.  
We use THT flag for additional report to show manual placed parts list.  
Only primary feeder assignment is used in V2 software export.

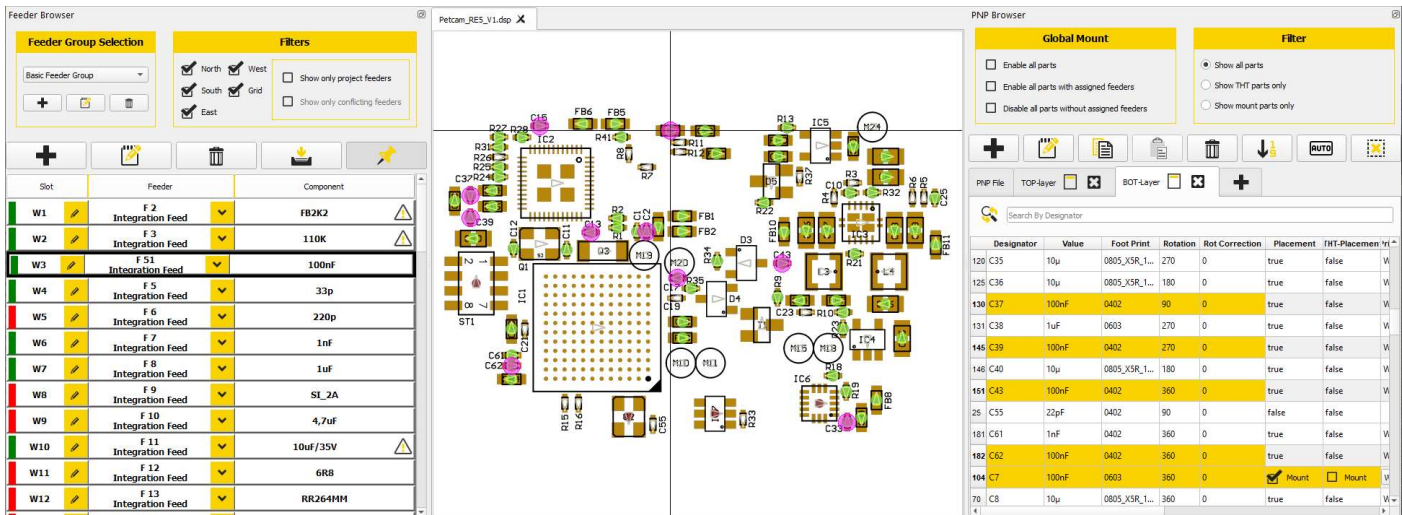
### Cross Reference Placement data on Gerber view

If line or multiple lines selected the GERBER view shows selection state and cross for last selected PNP data.

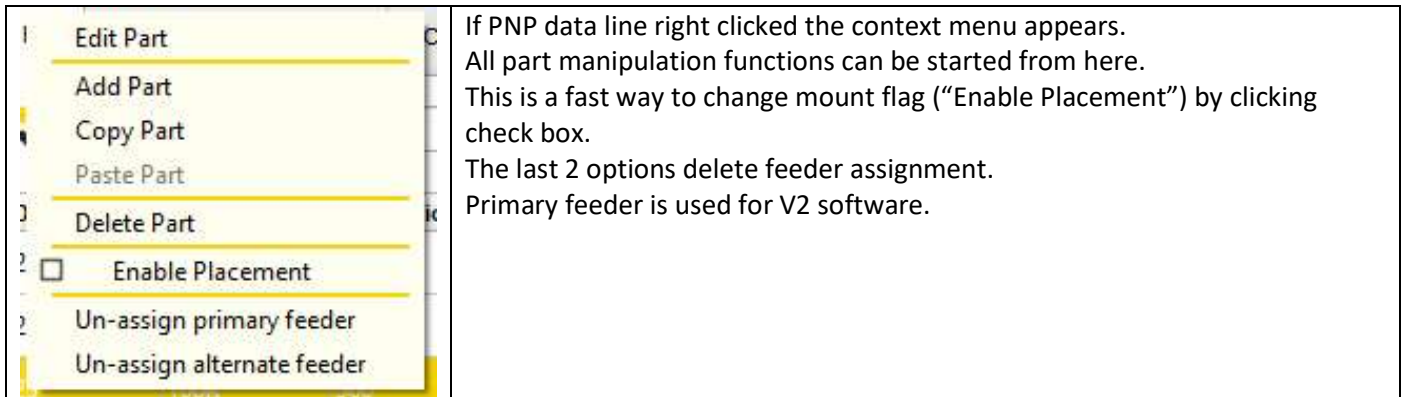


### Cross Reference Feeder parts selection on Gerber view

If variants tab opened click on feeder and all assigned placement positions get highlighted in GERBER view. In addition, all components are also selected in the PNP Data Grid.



### Context right click Menu on PNP tab

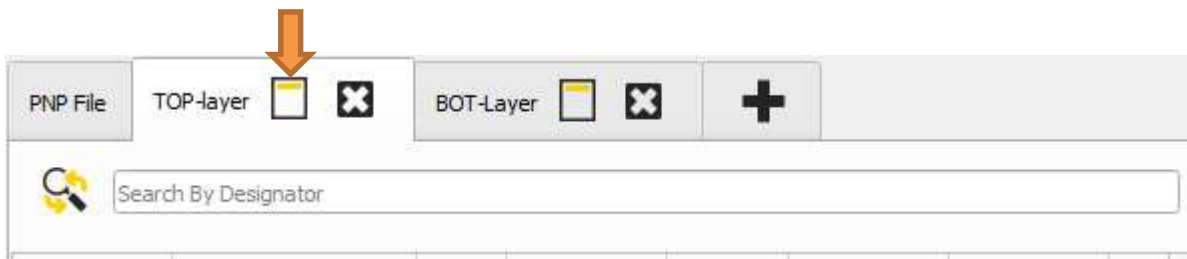


If PNP data line right clicked the context menu appears. All part manipulation functions can be started from here. This is a fast way to change mount flag (“Enable Placement”) by clicking check box. The last 2 options delete feeder assignment. Primary feeder is used for V2 software.

### Context Menu on SMT variants tab

	<p>If PNP data line right clicked the context menu appears. All part manipulation functions can be started from here. Feeder un-assignment possible too. This is a fast way to change mount flag (“Enable Placement”) by clicking check box. The next 2 options delete feeder assignment. Primary feeder is used for V2 software. Copy functions used to copy X/Y coordinates to mark point 1 /2 in SMT header data of currently selected variant. Copy function used to copy X/Y coordinates to PCB origin in SMT header data of currently selected variant.</p>	<p>The co coordi variant</p>
--	---	--------------------------------------

### PCB settings on SMT variants tab



PCB project settings get opened by clicking the document icon on tab header.

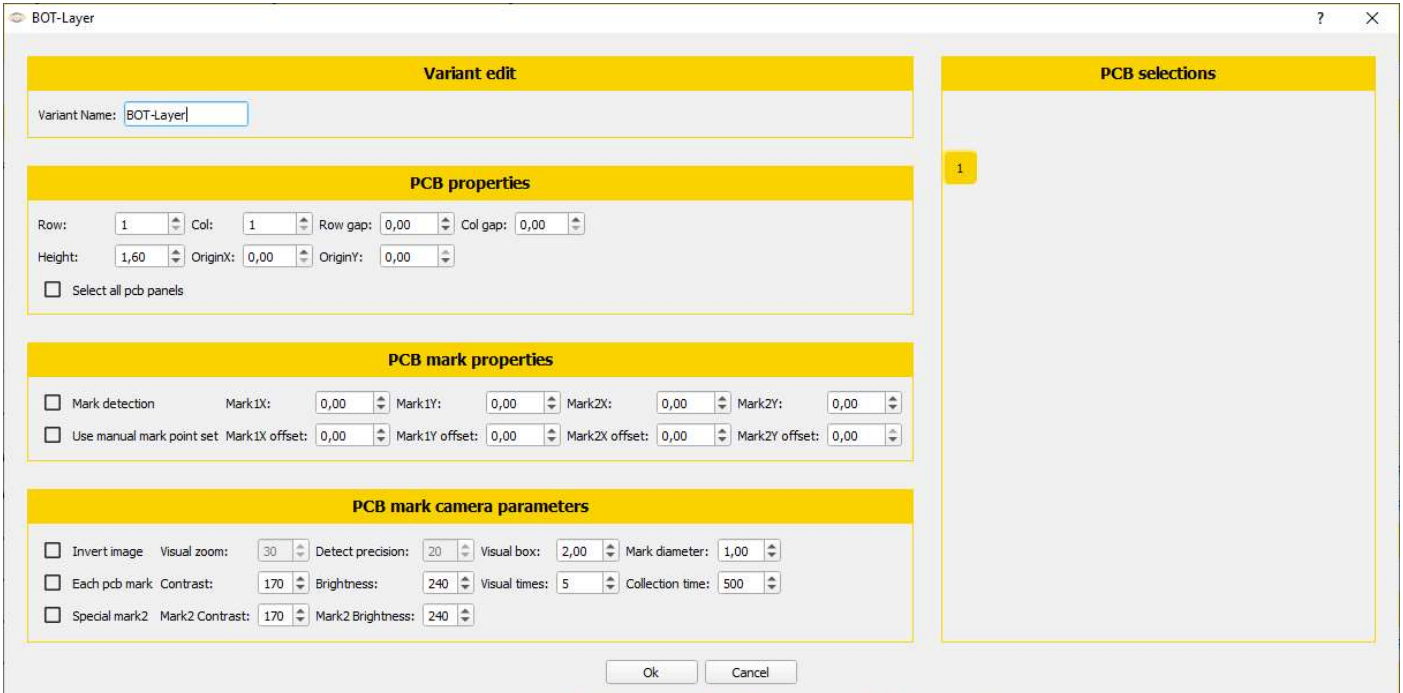
	<p>This small context menu appeared to open the PCB project settings. You can copy and paste project setting to different variant too.</p>
--	--

### PCB settings global presets for SMT header data

You find PCB Presets in Settings menu

	<p>If SMT project setting globally set, each new variant receives a copy of it.</p>
--	---





These settings are exactly same in V2 software PCB project settings.

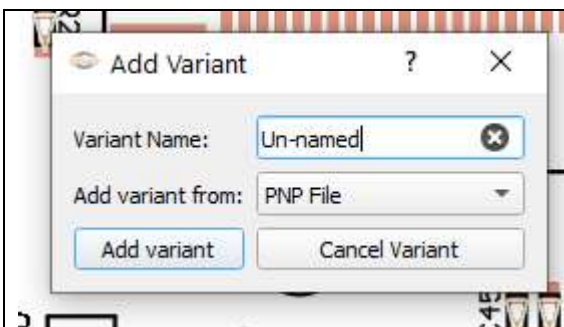
Exported SMT projects need to adjust PCB origin in V2 software.

Mark point positions can be copied by right click context menu on PNP data line shown before or teach in by V2 software.

During creation of variant the global SMT header settings getting copied to variant attached PCB settings.

### How to create new placement data variant

First click on the plus button on tab bar over PNP data grid.



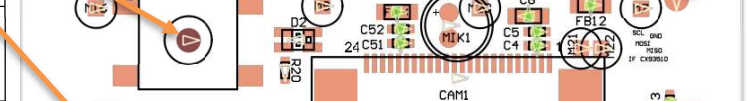
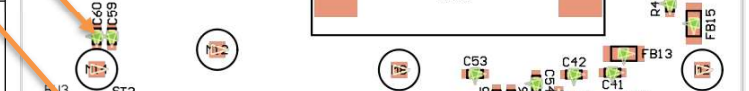
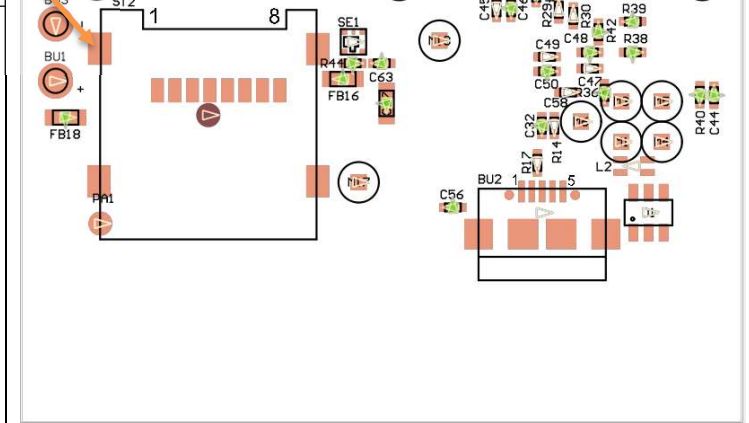


The **“Add Variant”** dialog ask to assign a new variants name. Use the drop-down box to select the data source you want to copy from.

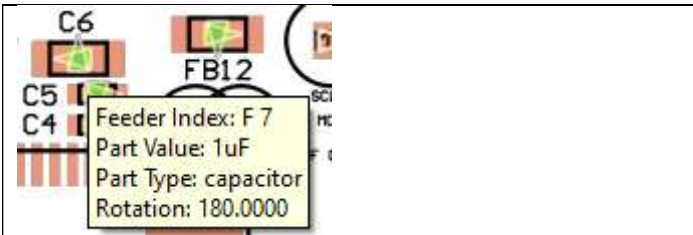
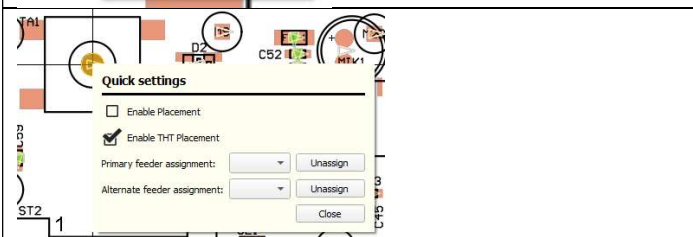
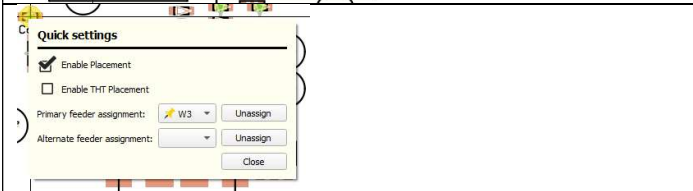
- PNP Data
- Any other variant in project

Finally, **“Add variant”** button will create the new variant and copy placement data.

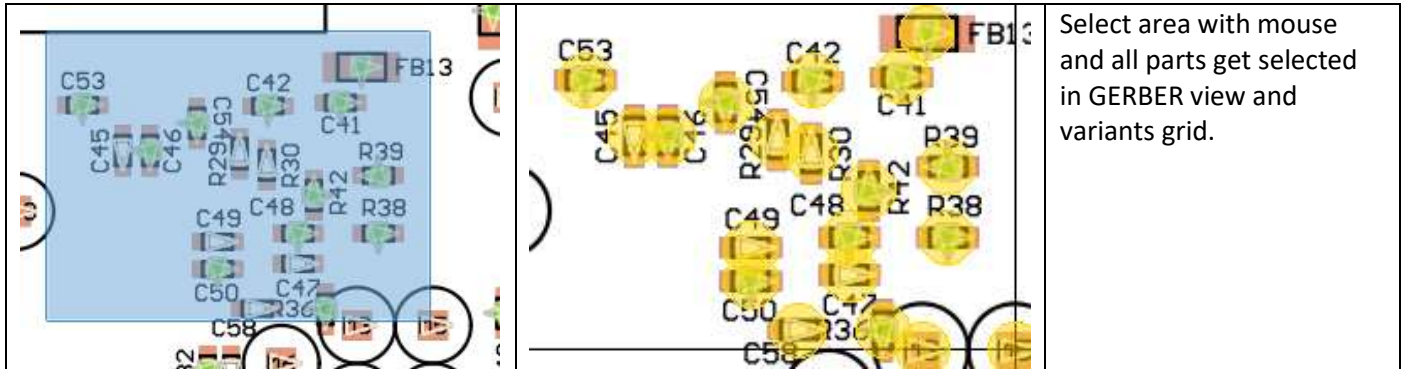
## 8. GERBER View

Project tab		GERBER overlay layer
THT part mount flag		Part angle indicator point to zero degrees
SMT part mount flag		
GERBER pad layer		
		

### Possible Mouse actions in GERBER view

	Mouse over mount flag circle information show assigned feeder and part parameters.
	Quick edit if mount flag circle clicked THT part placement shown.
	Quick edit if mount flag circle clicked SMT part placement shown. Direct Feeder assignment / un assignment possible using one click.
Right click to GERBER view	Move viewing area
Mouse Wheel	Zoom GERBER view

**Multi component selection**



Select area with mouse and all parts get selected in GERBER view and variants grid.

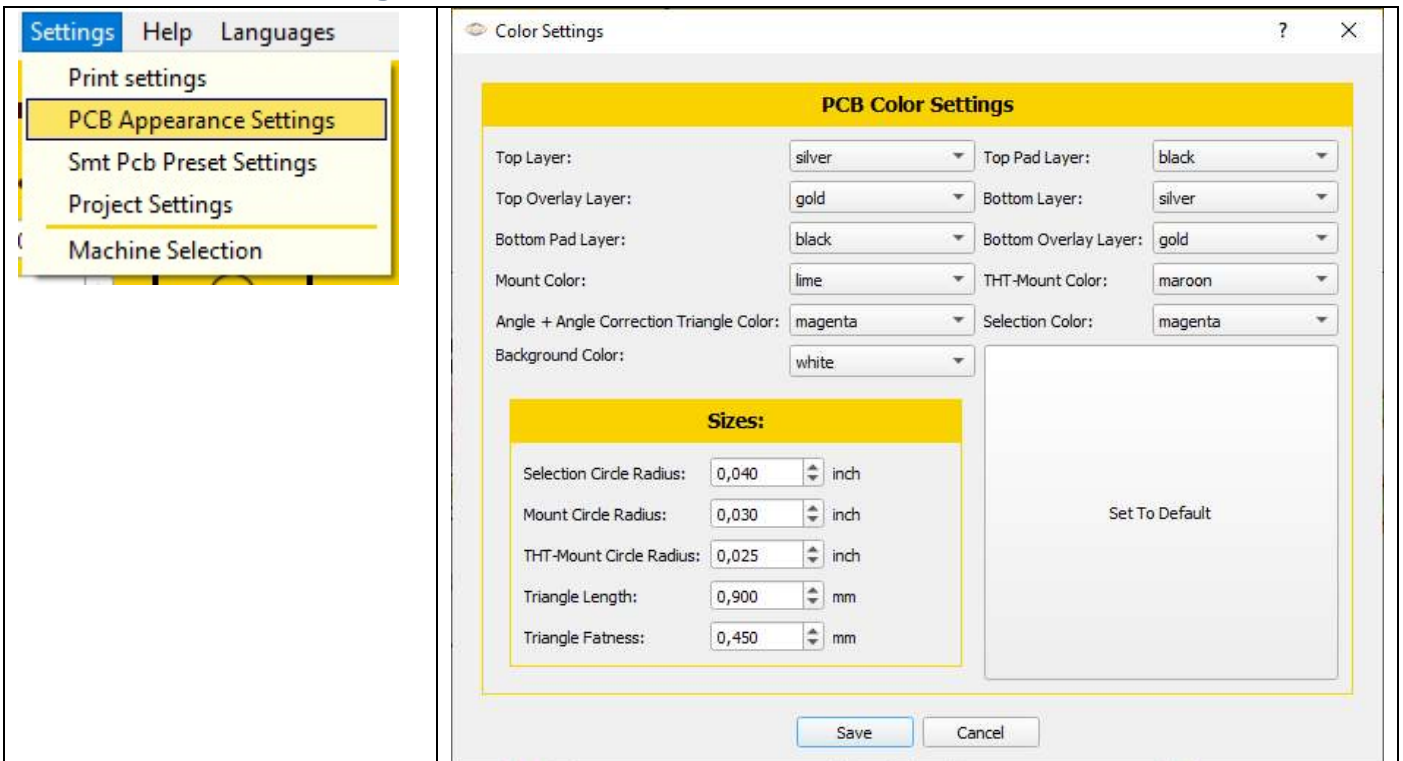
**Mass edit using area or grid selection**

Designator	Value	Rotation	Rot Corrector	Placement	THT-Placemen	Prima	
26	C54	22pF	90	90	true	false	W4
27	C53	22pF	360	90	true	false	W4
28	BU3	CON\1p\CAB01412	90	0	false	false	
29	BU1	CON\1p\CAB01412	0	0	false	false	
31	R40	10K	90	90	true	false	W27
32	FB14	300R/100Mhz/0,15R	360	90	true	false	W1
33	C52	100nF	360	90	true	false	W3
34	C51	1nF	360	90	true	false	W6
35	C50	100nF	360	90	true	false	W3
		nF	360	0	false	false	
		0nF	360	90	true	false	W3
		nF	360	0	false	false	
		0nF	90	90	true	false	W3
		nF	90	0	<input type="checkbox"/> Mount	<input type="checkbox"/> Mount	
		0nF	270	90	true	false	W3
			90	0	false	false	

Select area and assign feeder for example or switch mount flags.



## GERBER view color settings



Each layer and Item have color selector. The SMT report has own color settings for printing.

Sizes for each primitive in GERBER view is adjustable.

## 9. PNP Data Import Dialog

This is our flexible SMT mount (CSV) data import dialog.

We use import profiles for TOP and BOTTOM side to import PNP data by reading CSV files.

<p><b>Field Assignment</b></p> <table border="1"> <thead> <tr> <th>Built-In Header</th> <th>File Column Index</th> </tr> </thead> <tbody> <tr><td>Index:</td><td>0</td></tr> <tr><td>Designator:</td><td>1</td></tr> <tr><td>Rotation:</td><td>4</td></tr> <tr><td>MidX:</td><td>2</td></tr> <tr><td>MidY:</td><td>3</td></tr> <tr><td>Footprint:</td><td>6</td></tr> <tr><td>Mount:</td><td>0</td></tr> <tr><td>Layer:</td><td>0</td></tr> <tr><td>Value:</td><td>5</td></tr> <tr><td>Parse From Row#:</td><td>1</td></tr> </tbody> </table>	Built-In Header	File Column Index	Index:	0	Designator:	1	Rotation:	4	MidX:	2	MidY:	3	Footprint:	6	Mount:	0	Layer:	0	Value:	5	Parse From Row#:	1	<p>Profiles assign the imported column data to the SMT data fields according to sequence. If field column index = 0 field gets ignored. Update column index for each field by comparing import data.</p> <p>Import options allow to suppress leading rows in file, to define the line where the evaluation should start. ("Parse From Row")</p>
Built-In Header	File Column Index																						
Index:	0																						
Designator:	1																						
Rotation:	4																						
MidX:	2																						
MidY:	3																						
Footprint:	6																						
Mount:	0																						
Layer:	0																						
Value:	5																						
Parse From Row#:	1																						

### Internal FIELD list:

<b>Index</b>	Base sorting or import order index
<b>Designator</b>	Part identifier
<b>Rotation</b>	Placement angle
<b>MidX</b>	Placement coordinate X
<b>MidY</b>	Placement coordinate Y
<b>Footprint</b>	Part decal
<b>Mount</b>	SMT mount flag
<b>Layer</b>	T, TOP, B, BOT flag assign part mounting side on PCB
<b>Value</b>	Part value

<p><b>Import Layer</b></p> <p><input checked="" type="radio"/> Top   <input type="radio"/> Bottom   <input type="radio"/> Both</p>	<p>Select layer assignment mode to TOP or BOTTOM data or combined data to "Both". If Import file contains TOP and BOT side data, select "both". For Eagle users use 2 different import profiles one for each layer and assign to TOP and second to Bottom layer.</p>
<p><b>Units</b>      <b>Delimiter</b></p> <p><input checked="" type="radio"/> mm      <input checked="" type="radio"/> SPACE  <input type="radio"/> mil      <input type="radio"/> COMMA  <input type="radio"/> inch      <input type="radio"/> SEMI-COLON</p>	<p>Unit conversion is done by Units selector. The internal format is [mm] because of V2 software is using mm only.</p> <p>We support different delimiters in CSV file.</p>

## Single File PNP Data Import Profile

The screenshot shows the 'PNP Import' dialog box. On the left is a 'File Preview' section with a file list table. On the right is a 'File Profile' section with various configuration options. Orange arrows point from text labels on the right to specific elements in the dialog.

	1	2	3	4	5	6	
1	SE1	APDS-9003-020	TopLayer	APDS-9003-020	-1.6002	-1.3462	0
2	R44	10K	TopLayer	0402	-1.6510	-2.6924	360
3	C63	100nF	TopLayer	0402	0.1778	-2.6924	180
4	T1	BC847B	BottomLayer	SOT-23-3_BC847B	-5.7150	-4.3434	270
5	R37	220R	BottomLayer	0402	-8.9662	8.4328	90
6	R36	4K7	TopLayer	0402	14.1732	-4.5466	90
7	D5	BAS40-05	BottomLayer	SOT-23-3_BAS4...	-6.5278	8.0264	90
8	M20	Testpoint	BottomLayer	Testpoint	1.3970	1.0160	180
9	M19	Testpoint	BottomLayer	Testpoint	4.4450	1.6510	180
10	M18	Testpoint	BottomLayer	Testpoint	-11.4300	-6.3500	180
11	M15	Testpoint	BottomLayer	Testpoint	-8.8900	-6.3500	180
12	M11	Testpoint	BottomLayer	Testpoint	-1.2700	-7.6200	180
13	M10	Testpoint	BottomLayer	Testpoint	1.2700	-7.6200	180
14	ST2	112C sd Socket	TopLayer	112C_mit_Micr...	-10.7188	-5.9436	360
15	C56	22pF	TopLayer	0402	4.6482	-11.7348	180

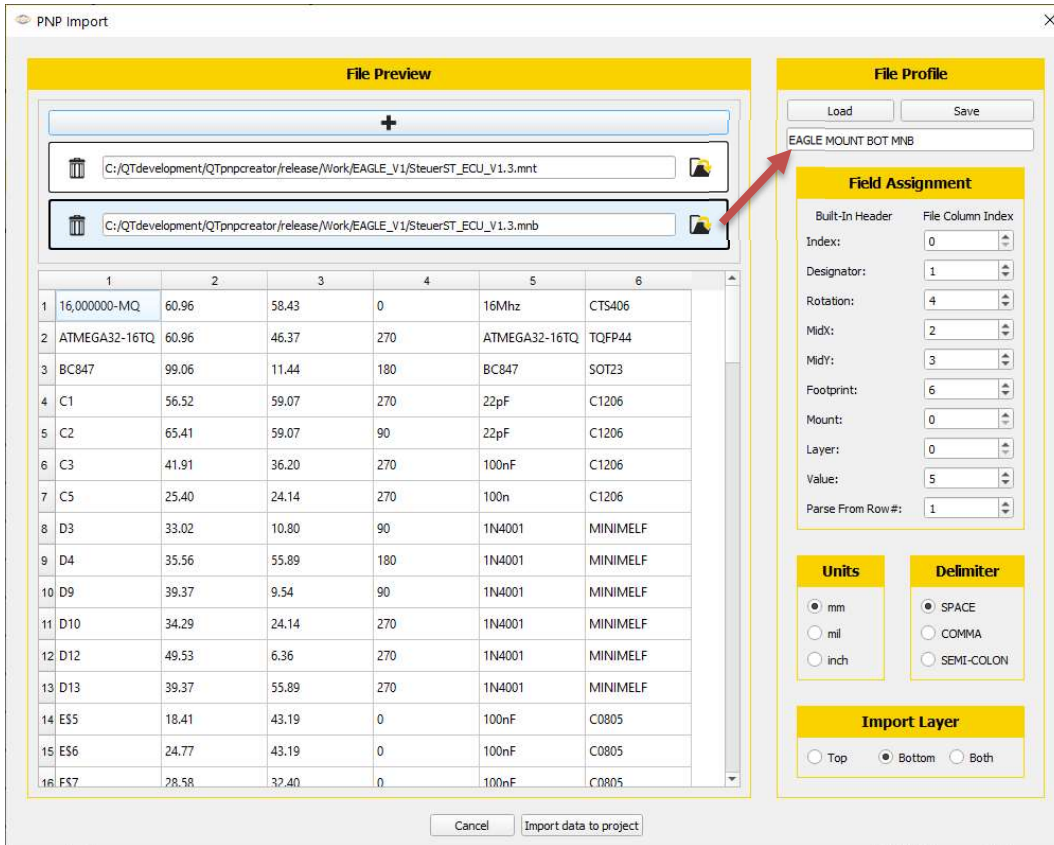
**Annotations:**

- Load and save import profiles:** Points to the 'Load' and 'Save' buttons in the 'File Profile' section.
- Assign column to field list:** Points to the 'Field Assignment' section, specifically the 'Index' dropdown.
- Add Profile if 2 profiles needed for TOP & BOTTOM:** Points to the 'Import Layer' section, specifically the 'Both' radio button.
- Selected Profile location:** Points to the 'File Profile' section, specifically the 'Album CSV AD20' text field.
- Starting row settings to start data parsing:** Points to the 'Parse From Row #' dropdown in the 'Field Assignment' section.
- Unit conversion:** Points to the 'Units' section, specifically the 'mm' radio button.
- Delimiter settings:** Points to the 'Delimiter' section, specifically the 'COMMA' radio button.
- Layer assignment mode setting:** Points to the 'Import Layer' section, specifically the 'Both' radio button.

Last step is to click import data to project button to write data to PNP data tab.

**The whole PNP data get overwritten in your project!**

## Double File PNP Data Import Profile



Example shows dual import profile one for each Layer.

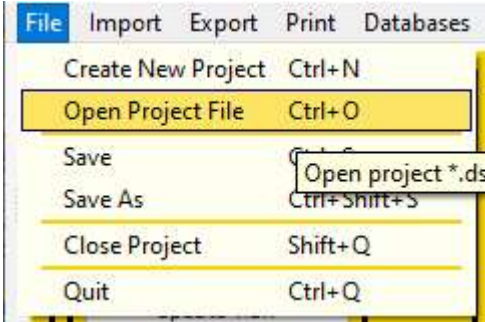
<p><b>Import Layer</b></p> <p><input checked="" type="radio"/> Top   <input type="radio"/> Bottom   <input type="radio"/> Both</p>	<p>Each import file has own profile and data destination on TOP or BOTTOM side. When import file getting selected the complete parameter set gets updated to assigned profile settings.</p>
--	---

Last step is to click import data to project button to write data to PNP data tab.

**The whole PNP data get overwritten in your project!**

## 10. Projects

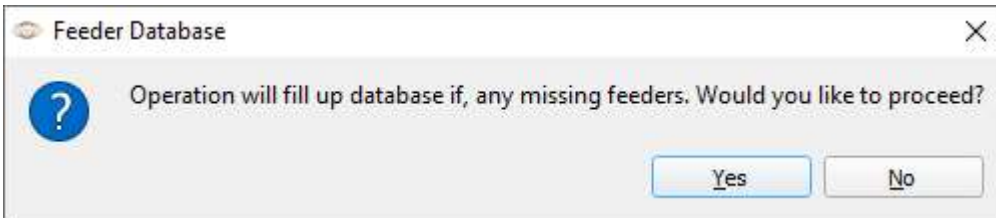
### Loading projects




Use file menu to open project files (\*.dsp). After project file selection the following 2 dialogs appear  
First Dialog ask to add missing components from included feeder database to component database.



Second Dialog ask to import missing feeders to feeder database.

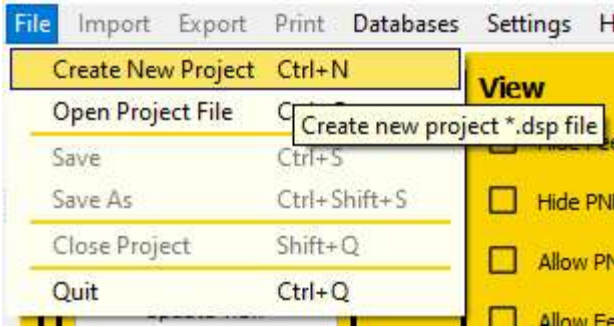


These two options automatically create feeder and component database entries.

All in project included data is shown in 3 panels of our main window. On the left side the feeder database is shown, allows to edit and assign feeders. If you use a multi monitor environment, you can dock out feeder panel by clicking . A double click on head of out docked feeder window returns to docked state.

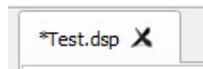
The area in the middle shows GERBER view and status information of our loaded PCB project. It is possible to load multiple PCB project shown as tab's in GERBER view. Switch between projects by click on tab header.

## Creating projects



To start a new project use “Create New Project” menu function. The software creates a directory named by project name in work folder. All created and imported files will be copied there. It is possible to backup the whole data structure under work folder to archive project data and files.

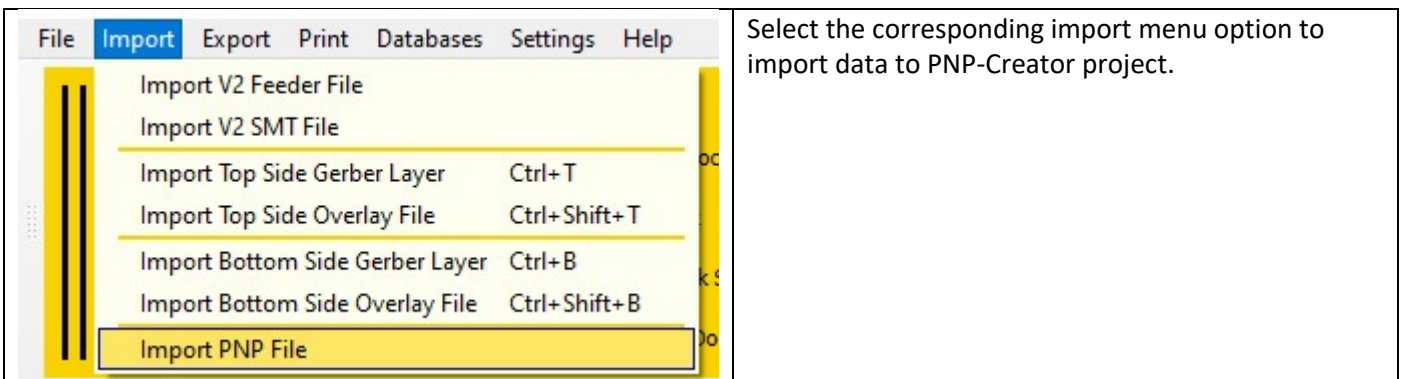
A project needs feeder data, PNP data and optional GERBER files to create functionality.



The project name appears on project tab header.

Software can handle multiple projects. The active project gets selected by clicking project tab header.

Next step we need to import data to project using the import menu.



**Import V2 Feeder File** will read V2 software feeder file and create components and feeders if necessary.

**Import V2 SMT File** reads a V2 SMT job data file to PNP data list.

**Import Top Side Gerber Layer** read top side pad master GERBER file to GERBER view.

**Import Top Side Overlay Layer** read top silkscreen GERBER file to GERBER view.

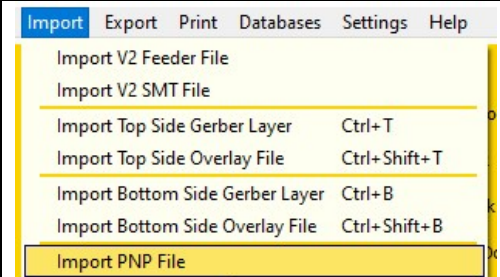
**Import Bottom Side Gerber Layer** read bottom side pad master GERBER file to GERBER view.

**Import Bottom Side Overlay Layer** read bottom side silkscreen GERBER file to GERBER view.

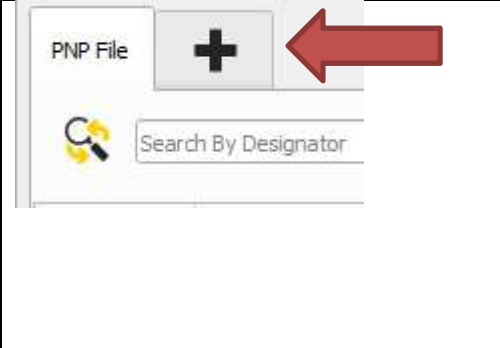
**Import PNP File** open PNP data import dialog to read CSV files using import profiles.



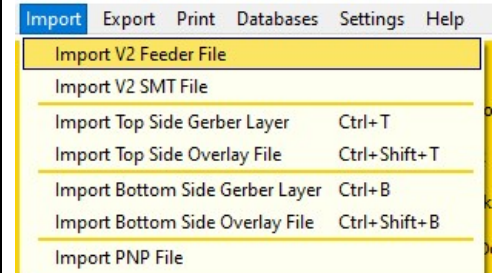
### 1 Step importing PNP data

 <p>The screenshot shows the 'Import' menu with the following items: Import V2 Feeder File, Import V2 SMT File, Import Top Side Gerber Layer (Ctrl+T), Import Top Side Overlay File (Ctrl+Shift+T), Import Bottom Side Gerber Layer (Ctrl+B), Import Bottom Side Overlay File (Ctrl+Shift+B), and Import PNP File (highlighted).</p>	<p>Starting point we need to import PNP data first. Please refer to chapter 7 PNP data Import dialog.</p>
--	---

### 2 Step creating first variant.


 <p>The screenshot shows the 'PNP File' tab with a plus button and a red arrow pointing to it. Below the plus button is a search box labeled 'Search By Designator'.</p>	<p>We need to create minimum one variant from imported PNP data to export later to V2 SMT file. First click on the plus button on tab bar over PNP data grid. The <b>“Add Variant”</b> dialog ask to assign a new <b>variants name</b>. Use the drop-down box to select the data source you want to copy from.</p> <ul style="list-style-type: none"> <li>- PNP Data</li> <li>- Any other variant in project</li> </ul> <p>Finally, <b>“Add variant”</b> button will create the new variant and copy placement data.</p>
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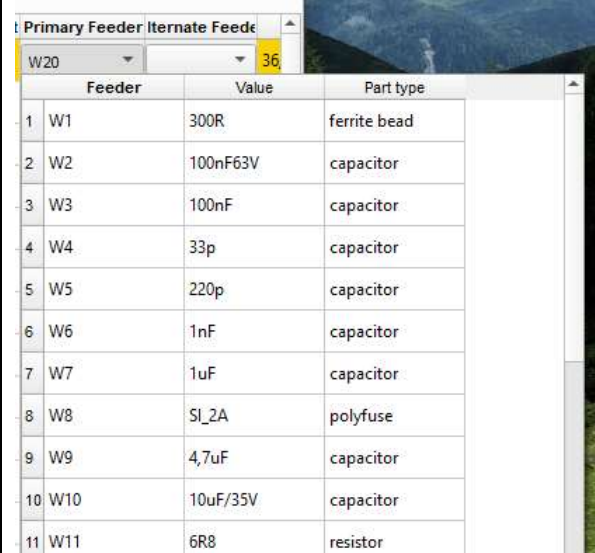
### 3 Step import feeder file.

 <p>The screenshot shows the 'Import' menu with the following items: Import V2 Feeder File (highlighted), Import V2 SMT File, Import Top Side Gerber Layer (Ctrl+T), Import Top Side Overlay File (Ctrl+Shift+T), Import Bottom Side Gerber Layer (Ctrl+B), Import Bottom Side Overlay File (Ctrl+Shift+B), and Import PNP File.</p>	<p>Next step we need to import feeder file to assign feeder slots to SMT data positions. After V2 feeder import the slots can be modified and different feeder from database assigned.</p>
--	--

#### 4 Step assign feeders to PNP data.

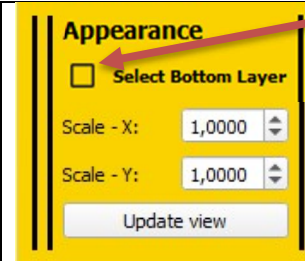
We have different options to assign feeder to variants PNP data lines.

	<p>The “AUTO” button compares component name versus installed feeders’ components name. Matching pairs get assign during processing.</p>
---	--

	<p>Second option select one or multiple lines in PNP data grid and open dropdown box in “Primary Feeder” column. Column sorting gets started by clicking column header to search for feeder index, component value or part type.</p>
---	--

#### How to handle bottom side data

If bottom data gets imported, we need to mirror the placement data for PNP machine.

	<p>Use a bottom layer variant and switch on “Select Bottom Layer” check box while variant selected. The coordinates get mirrored during SMT file export. And bottom GERBER data shown if this variant selected.</p>
--	---



## 11. Components Database Editor

Annotations for the Components Database Editor:

- Add new component
- Save component
- Click on column header for sorting
- Delete component
- Open package database
- Add picture to component

The component database is used to manage the component parameters. There are 2 ways to create components.

- With the feeder import automatically
- Manually with the add button

Components are assigned to the feeder. All parameters correspond to the fields in our V2 software.

Package Assignment dialog box data:

Name	Length	Width	Height
0201	0,6	1	0,4
0402	0,8	1,5	0,4
0402R	0,8	1,5	0,4
0603	2	2	0,4
0603C06	1,33	2	0,6
0603C08	1,33	2	0,7
0603C10	2	2	0,9
0603FB	2	2	0,8
0603R	2	2	0,4
0603SP	2	2	0,55
0805	3	2	0,5
0805C1.2	2,5	2,5	1,1
0805R	3	2	0,5

Package selection dialog data gets updated from V2 software databases.  
**Take care components can only get assigned to one feeder because V2 software already combines package and feeder type in package database!**

## 12. Feeder Database Editor

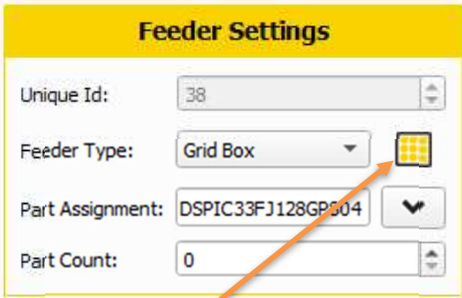
Each feeder in this database is unique and addressed by FXXX index.

The selection grid can get sorted by clicking on column header.

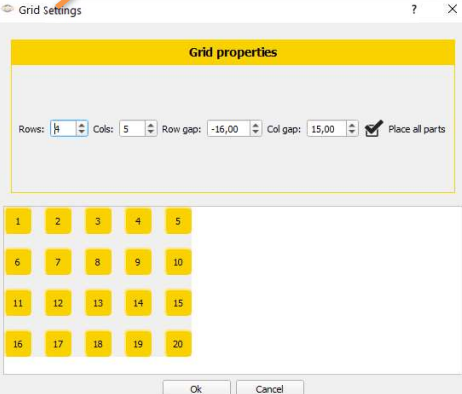
### Splitter

### Searching and feeder filter

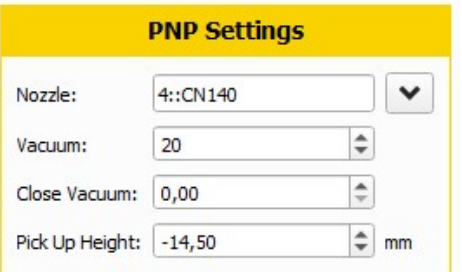
## Feeder settings

	<p>The feeder receives auto assigned unique ID. Feeder type enabled advanced settings. The grid icon on right side opens the grid settings dialog. Part assignment button opens components database selection dialog to assign part data to feeder. Part count is used to monitor parts count in feeder.</p>
---	--


## Grid settings dialog

	<p>Grid settings dialog appears only if corresponding feeder type selected. Adjust Row / column count to define array dimensions. Row gap and column gap defines pocket distances.</p>
--	--

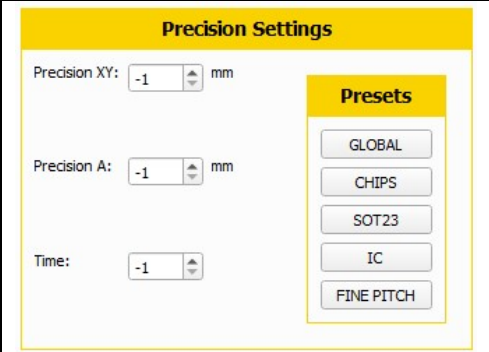
## PNP Settings

	<p>Assign nozzle from nozzle list and vacuum settings if nozzle changer disabled. Close vacuum setting is used to close vacuum before part reaches paste surface. Pickup height defines local pickup height.</p>
---	--

## Part name alias

	<p>We offer 3-partname alias fields if automatic feeder assignment should use different part names for feeder assignment. For example, 100n, 100nF, 100nF/63V. Three different part names to assign same feeder. Useful function if imported PNP files use slightly different part names.</p>
---	---

## Precision Settings

	<p>Our precision settings dialog has 5 preset buttons to assign commonly used settings for offset, angle correction and camera delay (“Time”)</p>
--	---

## Strategies to import feeder data in feeder database

If you want to import feeder and component database settings from previous defined “feeder\_config.fig” files.

Just create a project, import feeder databases from different locations to fill your feeder and components database.

This is faster than creating one by one.

Each unique combination of feeder and part will create an entry in feeder database for future use.