



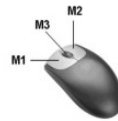
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Installation Software: C:/Programs/IBF...

Installation of component database, look by:
 Windows Start button, Programs, TARGET 3001!<Version number>, Database

Mousekeys:

- M1** = A click and release of the left mouse button
- M2** = A click and release of the right mouse button
- M3** = Scrolling the mouse wheel (if mouse wheel present)
- M11** = Double clicking the left mouse key
- M22** = Double clicking the right mouse key
- M12** = Simultaneously clicking both right and left mouse button
- M1H** = Clicking and holding the left mouse key
- M2H** = Clicking and holding the right mouse key



Key combinations:

- | | |
|--|---|
| <ul style="list-style-type: none"> [F1] Help, [Shift]+[F1] Check project [F2] Component database [F3] Schematic-PCB (with Cross Probe) [Shift]+ [F3] Schematic-PCB (without CP) [F4] Unit (mm, µm, inch, mil) [F5] Grid visible/invisible [F6] Grid snaps/not [F7] Fit to screen [F8] Crosshair [F9] Simulator (schem.)/Autorouter (layout) [F10] Back to pointer mode [F11] Create XGerber and Excellon [F12] Calculate air wires new (Layout) [1] Place pin/pad [2] Place signal wire/track [Strg] + [2] Draw line [3] Draw triangle (solid) [Strg] + [3] Draw triangle (outline) [4] Rdraw rectangle (solid) [Strg] + [4] Draw rectangle (outline) [5] Draw polygon (solid) [0] (=zero) Draw circle (solid) [Strg] + [0] Draw circle (outline) [a] Draw a torus (an arc) [b] Place a bus / Place a wire bridge [c] Capture Window [Shift]+[c] Additional capture window [d] Move/Displace selected elements [e], [@] Edit selected elements | <ul style="list-style-type: none"> [f] Find and select component/signal [g] Drag (sharp bend, arc or curve) [i] Insert symbol/package [+] Change layer while dragging [L] Place air wire (layout without schematic) [m] Mirror selected elements horizontally [Shift]+[M] Mirror selected elements vertically [n] Repaint window (new) [n] Attach signal name (click exactly onto the signal segment) [o] Edit options chosen in the drawing mode [r] Insert reference symbol to the schematic [Ctrl]+[r] Insert rests symbols of components [s] Select single element [Shift]+[s] Select additional element [t] Rotate (turn) element around the cursor [Shift]+[T] Set rotation (turn) angle and rotate [u] Measure distances [v] Rename signals [w] Draw air wire in PCB-without-schematic [x] Export symbol/package to the database [y] Merge selected elements to a symbol ["] Enter Text and text functions (variables) [.] (=full stop)Node/Via, change copper side while in „place track“ mode [#] Quick draw (display only contour of any drawn element) [ESC] Exit mode (back to pointer mode) |
|--|---|

More: search for „key combinations“

Import a schematic symbol:

Open component database, Also use **[F2]**, **[i]** or **[Ins]**

Wire a connection pin

Schematic router “Pin to Pin”

Mark, highlight element: by **M1** or capture window or **M1H** and displace mouse

Touch a covered part:

Place mouse over the element in question and press **[s]** as often as it flashes. Now press key **[e]** for edit.

Add to the highlighted: **[Ctrl]+[M1]** or **[+]**
 Edit: **M11** or **M1** and then **[e]**

Toggle bending mode: [Space bar] during placement or from the sidebar:



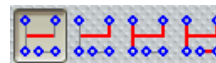
Drawing frame: load like a component.

Print name to signal wire: [n]

Place mouse middle to the signal, press **[n.]** Also see: Settings/Settings/Options.

Give a signal a name:

M11 on a signal. Set highlighting range:



Snap on Grid:

Size of the snapping square :



Set grid: and

Recommended: 0,635mm=25mil=1/40"

Displace element by grid:

Select, then press **[d]** and displace by arrow keys.

Coordinates: Absolute/Relative toggle using key **[Home]** at cursor position.

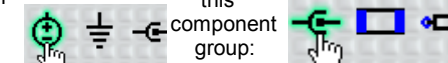
Switch between schematic and layout:



Import a package proposal to the layout:

Drag and drop from the proposal list or use **[Ins]** or **[i]**

M2 on a drag and drop symbol allows preset. **M1** upon such an icon opens the database at this component group:



Place track: or **[2]**

Button extension: **M1H** on etc. Will save track options on button.

Now press **[o]** to set track options.

Left: Current drawing layer. Right beside: the recently used ones.



M2 upon layer number: activate for drawing. Highlighted black: = non copper layer. Highlighted in copper colour = copper layer. Box ticked by **M1** or not: Layer is visible or not. Set layer functions: use the layer tool. **M11** upon a layer line allows to set it's function. „Assignment“ refers to the copper side a layer function is assigned to.

Create a multilayer:

In the layer tool set the function of layers 10 and 13 to „copper inside“. Corresponding area and deletion layers assign to either 10 or 13. As an alternative predefined layer sets can be chosen in the layer tool at the right hand side.

Flip a component to the opposite copper side of the board: Highlight it, then press **[m]** (=mirror).

Place a via: While routing press fullstop **[.]**, layer changes. Add **[Ctrl]** avoids layer change.

Draw a component package:

Switch to the layout view. Set grid 0,635mm or 25mil. Place pads according to the datasheet and draw a package outline using the functions of the icon: Highlight all. Place cursor to desired handle position. Export package by keyboard key [x] to the database.

Draw a schematic symbol:

Switch to the schematic view. Keep grid settings. Draw according to datasheet by the drawing functions of icon: Highlight all. Place cursor to the desired handle position. Unite the drawn by key [y]. If several gates then do this again for each gate. Highlight the elements completely and export the whole part by [x] to the database. During this procedure assign a package to it (follow the dialog).

3D-view:



In layout view press 3D-button.

Modify 3D-model/draw it newly:

Press [F2], the component browser opens. Now press M2 upon the component line in the list and use menu entry **Edit 3D**. Or press M2 upon the 3D image for modification or creation if there is no model yet. Save the 3D model within the package in the database.

Step Export: File/Input/Output formats/ File transfer/documentation/STEP export (3D)...

Start **Simulation** in schematic:

[F9] or and there:

In the dialog note the

Assistant

- = everything OK.
- = there are hints
- = there are warnings
- = there are errors. See Help

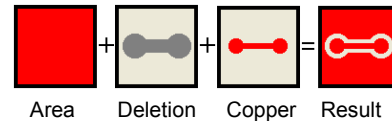
Start simulation

Create a PCB outline:

Menu Actions/PCB Outline Wizard
Or manually by drawing any shape on layer 23, *PCB outline*. Intersecting lines can be trimmed if needed (menu Actions/Trim lines). For further adjustments release this button: After highlighting a line you will have black touchpads at its tips. M2 upon one of it opens a context menu for line edition:

Create a Groundplane:

Assistant in Menü: Actions/ /Ground planes/Generate ground plane. Or manually: draw any solid figure on layer 0, *Area bottom* e. g. A solid polygon. Add the signal of the potential to it, eg. GND. A groundplane consists like a sandwich of three layers: *Area, Deletion and Copper*.

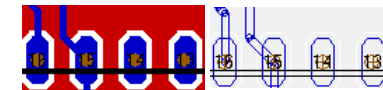


Remove groundplane islands:

In TAB „Convert groundplane to lines“.

Toggle between solid and outline view:

Use the hash key: [#]:



Airwire leads to nowhere:

Do a **Project reorganisation:** [Shift]+ [F12] or mouse on pad and [s] as long as an incidentally placed track piece flashes. Now press [Del].

Delete an air wire: Delete the signal name from pin and pad after M11.

Start autorouter: In layout press [F9] or use menu Actions/Autorouter.

Important sidebar buttons:



Highlight the complete part by hitting its handle cross with M1.



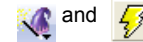
Highlight the complete part by M1 on any element of it.

TIP: No chance highlighting a single drawing element? Release this button:



So you don't always highlight the whole drawing.

Check Project:



M2 upon an error line or a marker explains what's wrong. Help: Catchword: „Check project“.

Insert a logo:

Docu: Menu Actions/Load Bitmap into a rectangle. **Copper:** Menu File/Input-Output formats/File transfer/Documentation/ Bitmap as a Symbol/Package

Create manufacturing data:

Print: Fade out unused layers. Open menu: File /Print... and tick Sharp black/white in the print dialog.

Gerberdata:

The Gerbers being created can be read by RS274D and RS274X machines. Also see File/Input/Output formats/Production/(X-)Gerber and Drill Output (PCB Out). Gerbers also can be imported.

Isolation milling:

File/Input/Output formats/Production/ Isolation milling. Formats besides HPGL: X-Gerber, NCP (Isel), CNC ISO 6983 DIN 66025 (G-Code), PCB (CharlyRobot), CBT (Colinbus), Excellon

Design a frontpanel:

Start File/Start-Assistant, then New Project: "Alu- Front panel". Or Menu Actions/Front panel, then follow the entries. Toolbar visible: see menu View/Toolbars. Front panel layers in most cases: 30,31, and 32

Exchange a symbol:

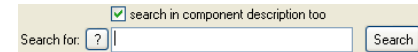
Delete it from the schematic and insert a different one from the database. Connect the signals newly.

Exchange a package:

Delete it from the layout and insert a different one from the database. Connect the tracks newly.

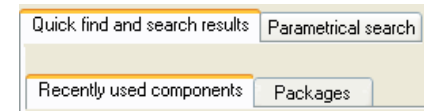
Use the Quick find and search results of the database:

Open component browser by [F2] and enter to the search line:



Enter e.g. 555 smd 3d. Now TARGET 3001! searches in the component names and descriptions, if the box is ticked. TARGET 3001! recognizes that the word fraction **smt** stands for a mounting technique. Further categories are e. g. **spice** and **3d** for the existence of a simulation resp. 3D model, „**texas**“ e. g. For a producer, **dip8** for a package form. Speech marks switch off this behaviour.

Upper or lower case does not play a role in the search.



Search from the components or only from the packages. Using the keys Page up, Page down or by the use of the arrow keys you toggle both sources.

Edit a 3D-model:

M2 upon the model or the place where it should appear in the browser. Or M2 upon the line of the component name in the component browser.

Context menu in the component browser:

M2 upon a component line opens a context menu with additional functions.