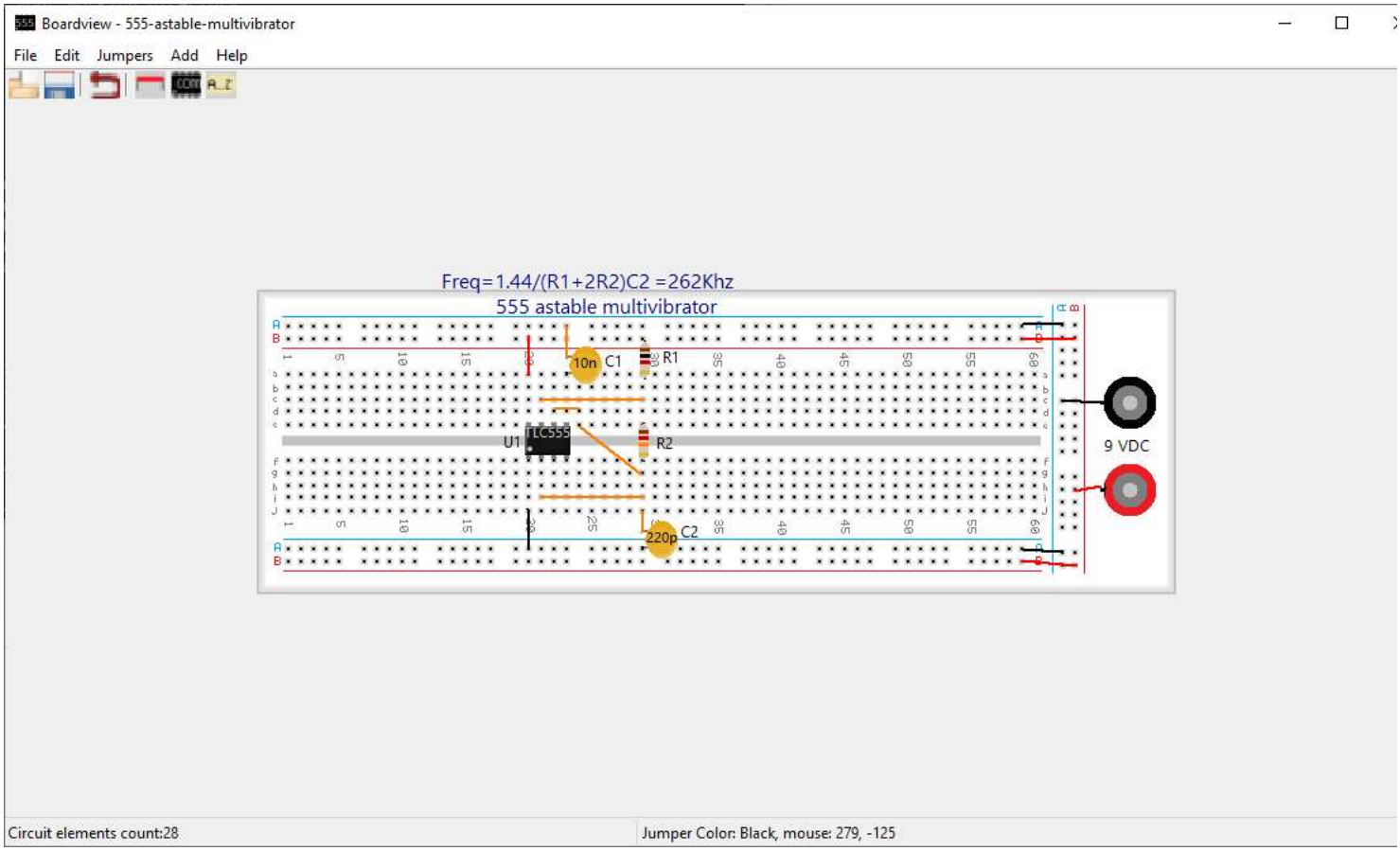
Introduction

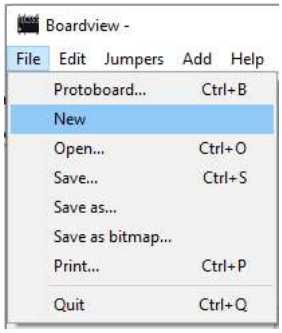
BoardView is a software to draw solderless prototyping board layout. These layouts can be saved as editable ***.bvp** files or as bitmap files. The bitmap file can be used to communicate the design to others.



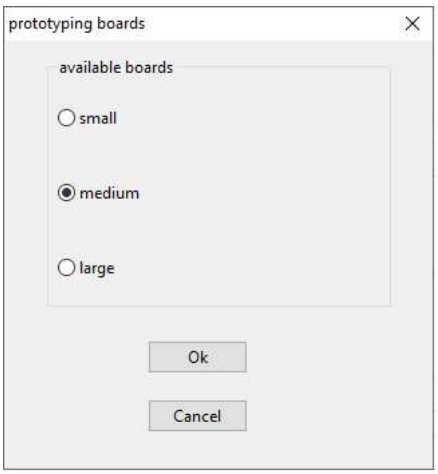
BoardView is so simple and obvious to use this manual is very brief.

Menus navigation

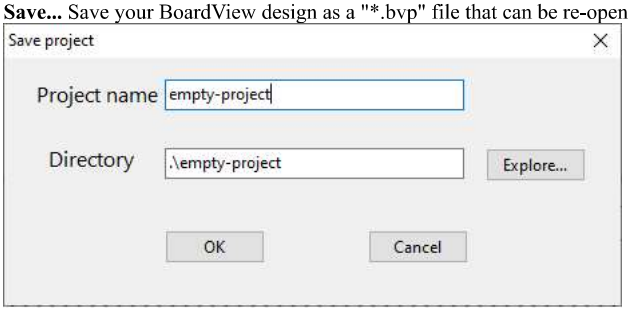
File menu



- **Protoboard...** Let you select the prototyping board size. Shortcut key: **<CTRL+B>**

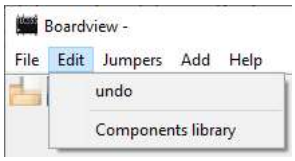


- **New** Begin a new project.
- **Open...** Open a previously saved BoardView "*.bvp" file for further editing. Shortcut key: **<CTRL+O>**
- **Save...** Save your BoardView design as a "*.bvp" file that can be re-open for further editing. Shortcut key: **<CTRL+S>**

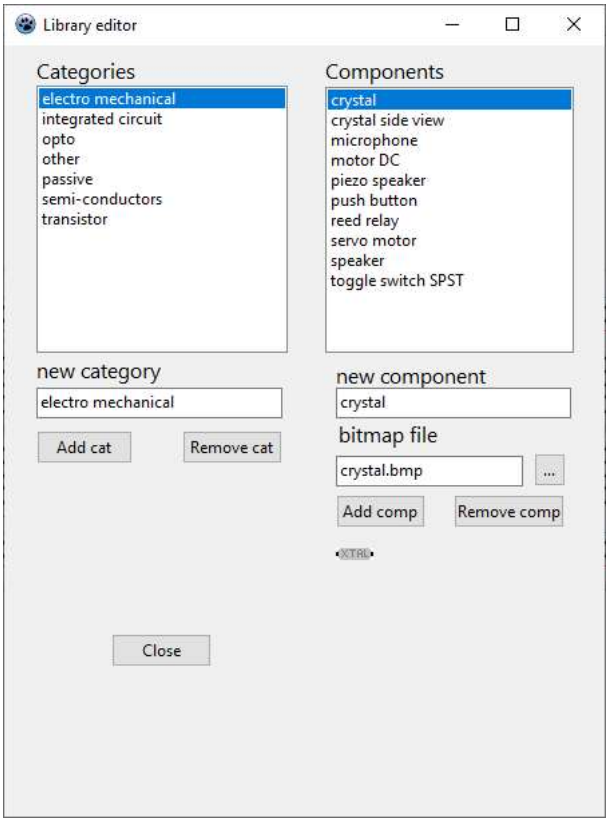


- **Save as...** Save your design under a new name.
- **Save to bitmap...** Save your design as a bitmap file. That file can't be edited in BoardView.
- **Print...** Print prototyping board design. Printing is done in landscape orientation. Shortcut key: **<CTRL+P>**
- **Quit** Leave the application. Shortcut key: **<CTRL+Q>**

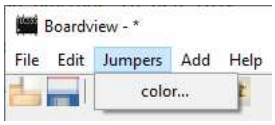
Edit menu



- **Undo** Delete the last added component,tag or jumper. Shortcut key: **<CTRL+U>**
- **Component library** Let you modify the components library. Component can be added to a category. New categories can be created. Existing component or category can be deleted.



Jumpers menu

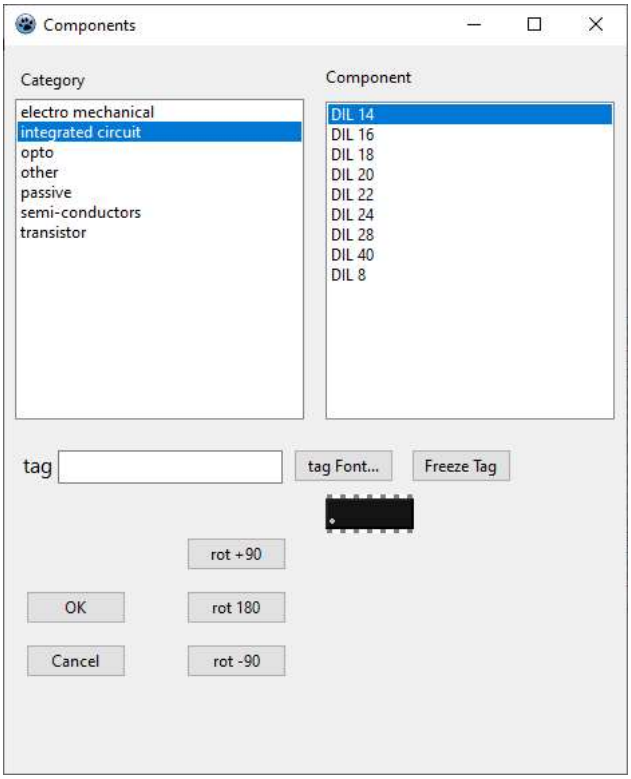


This menu contain only one item **color...** which open the wire color dialog. Shorcut key is **<CTRL+J>**.

This dialog let you select the color of wire installed on the board. There is 10 pre-defined colors which are the resistors standard colors except for the last which should be white but white wire on white board would be invisible.

Add menu

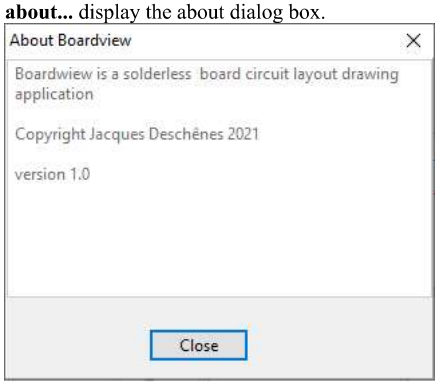
- **component...** Shortcut key: **CTRL+E** Open the electronic components selector dialog. Components are grouped in categories. Components are represented as bitmap files. You can add component to database, this is explained below.



- **tag...** Shortcut key: **CTRL+T**. Open the **tag** dialog box. This let you add text to identify component. You tag the component by right clicking over it. The font, size and color of tag are all selectable.

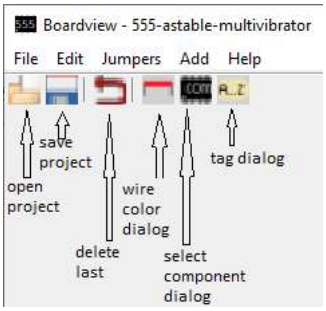
Help menu

- **manual** Shorcut key: **F1** Open this manual in default web browser.
- **about...** display the about dialog box.

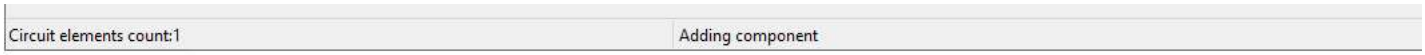


toolbar

The toolbar present the most used menu items as icons. Placing the mouse over an icon will display the corresponding tip in a balloon. Each element of toolbar as a shorcut key as presented above.



statusbar



The statusbar at bottom of main window is divided in 2 panels. Left panel display the number of elements placed on the board.

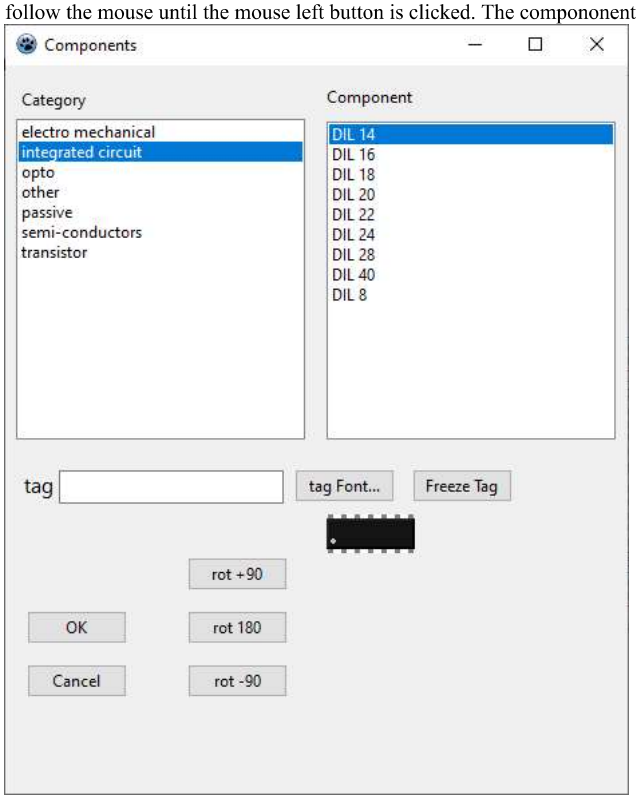
elements types

- **Components** are electronic component making the circuit.
- **Jumpers** are wires that connect components togethers to form the circuit.
- **Tags** are short text used to identify components or give other indication.

The right panel of status bar display information about current operation. If there is no operaction active then it display current jumper color and mouse position relative to left-top corner of prototyping board. Hence the coordinates can be negatives.

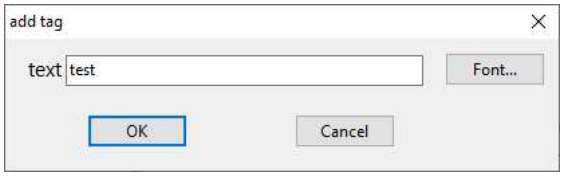
Placing elements on the board

- To Add a jumper click on the first end of wire position. The cursor change for a cross. Click on the second position of the wire. While moving the mouse a line follow the mouse cursor. Clicking with the right mouse button cancel the operation.
- To add a component click the component icon on the toolbar to open the component dialog to select the component. When the dialog is closed the component follow the mouse until the mouse left button is clicked. The compononent is then set at this position.

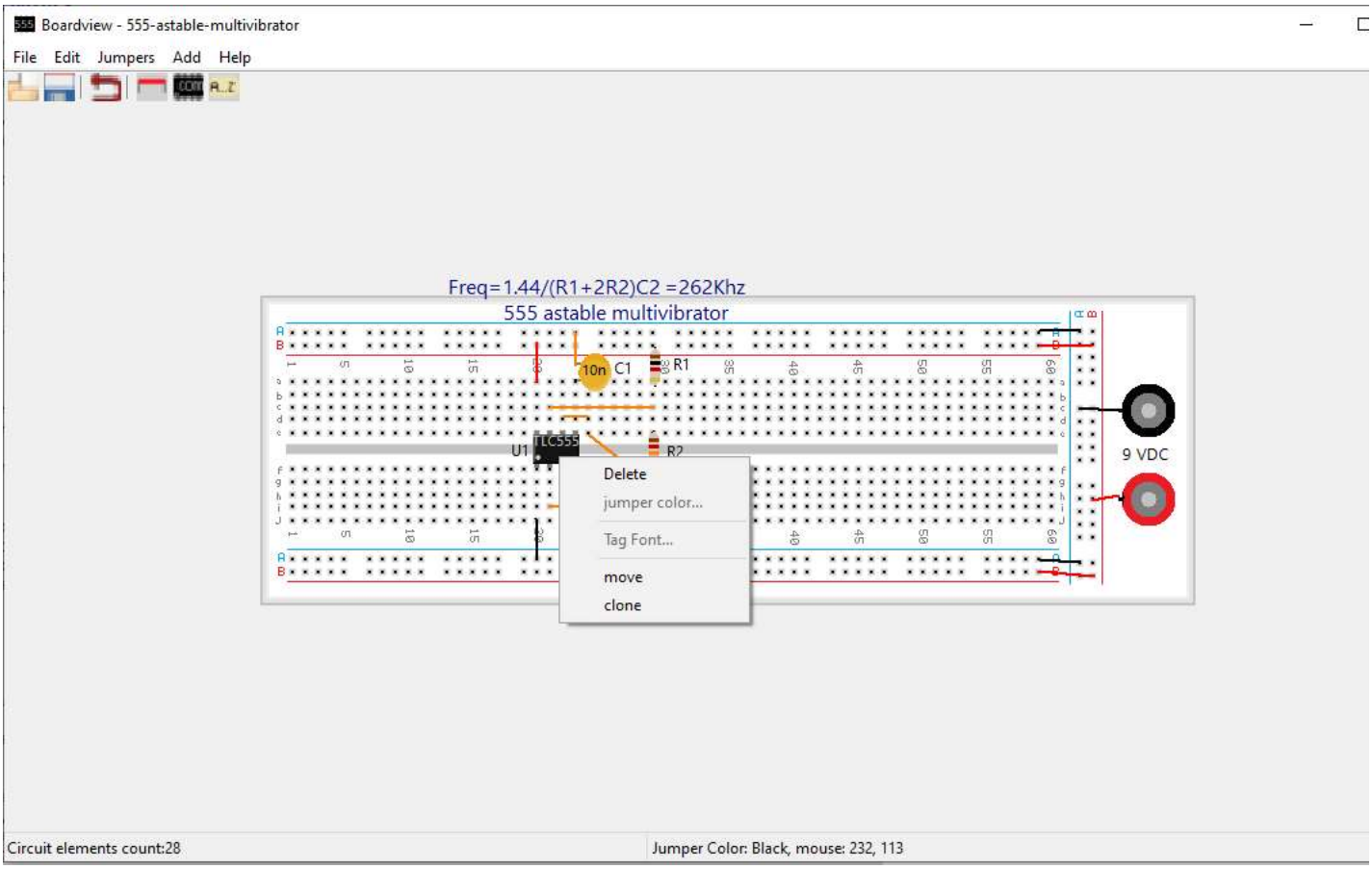


A tag can overlaid on the bitmap of the selected component. The procedure is the same as placing a tag on the prototyping board. The **freeze** button must be clicked before the **OK** button to fix this tag to the component. The tag added this way is not modifiable and follow the component. It become part of it. If the component is cloned the clone will have the save tag. The tag must fit inside the surface of component bitmap otherwise it will be truncated when frozen. The component bitmap may also be rotated by **+90°,180° or -90°**.

- To add a tag click the tag icon on the toolbar to open the tag dialog. When the dialog is closed the tag follow the mouse cursor until the left mouse button is clicked. The tag is then set to that position.



Popup menu

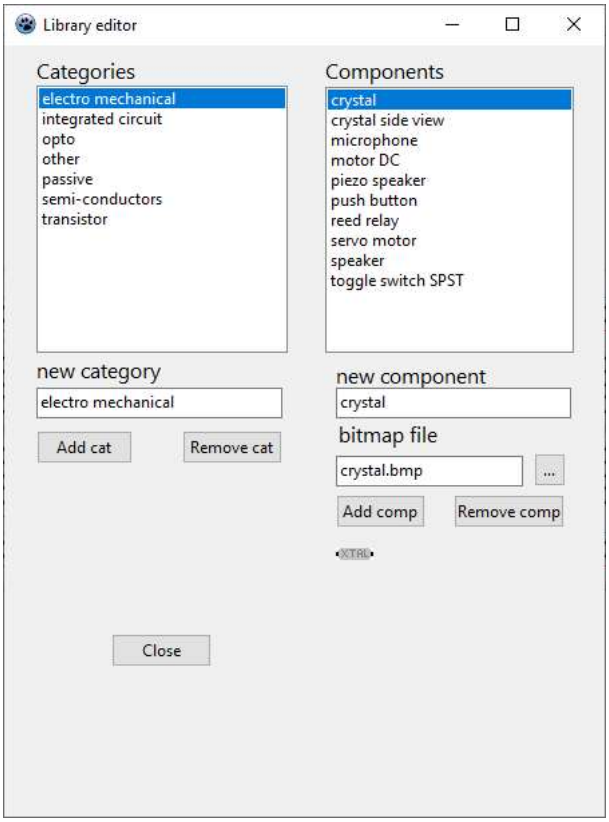


When clicking on a jumper, component or tag a popup menu appear. Only the items concerning the chosen element are activated in the menu.

- **Delete** Apply to all 3 types of elements. Delete the selected element from the board.
- **Jumper color...** Applay to jumpers only. Open the jumper color selection dialog. The color of the selected jumper is changed to this new color and new jumpers will be this color too until the color is changed again.
- **tag font...** Apply to tag only. This item let you modify a tag font properties.
- **Move** Apply only to components and tags. Let you move the selected element around.
- **Clone** Apply only to components and tags. Clone the selected element then move the clone at chosen position.

Elements are drawned on the board in the order they are created. If you drag a more recently added element over another one it mask the older one.

Library dialog



Controls on the left side of dialog are for categories and those on the right side are for components. The selected category can be delete by clicking **remove cat** button. All components of that category will be lost.

Adding a category is as simple as typing its name in the **new category** field and clicking **add** button. The new category will appear at the end of the list and be selected.

To delete a component from a category click **remove comp** button. The selected component will be delete from library.

To add a component to a category, first select the category, then type the component name in **new component** field. Components are displayed as bitmaps, so you must specify the bitmap file for that component before clicking **add comp** button. The new component will be added at end of list and selected. All bitmaps must be saved in the bitmaps subdirectory of the application executable.

The components library file is a Windows ***.ini** file named **components.ini** in the same directory as the executable. If its structure is well understood it can be modified in a text editor.

component bitmap

Components are standard Windows bitmaps. They can be drawn in any application that can save in that format. All bitmaps used by the component library must be saved in the **bitmaps** subdirectory of the application executable.

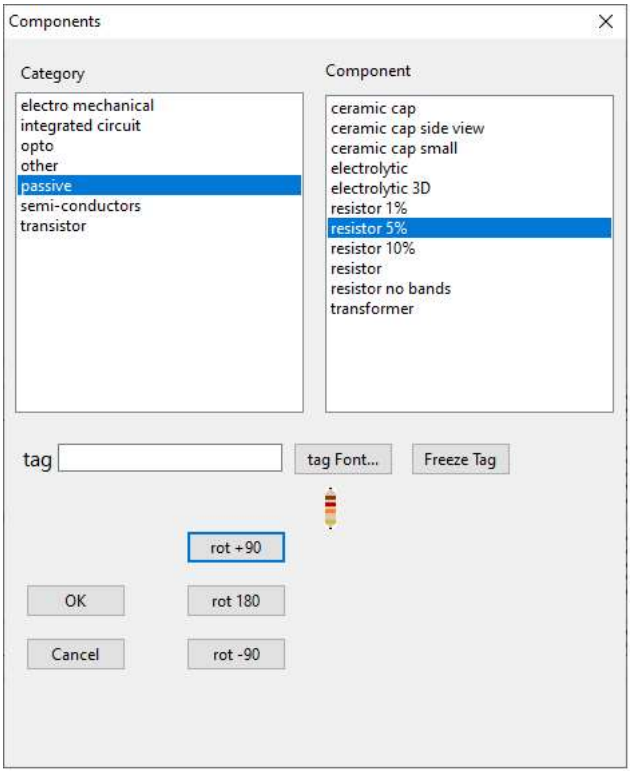
Resistor component

The resistors components with black bands are specialy designed for the bands to be filled with value color code. This black is not BGR=0 but BGR=0x020202. This is defined in the source code as constant **clBLACK2**. When one of banded resistor is selected, i.e. **resistor 1%, resistor 5% or resistor 10%** clicking with the left button on one **clBLACK2 band** open a color selection dialog with the predefined colors for standard resistors. The standard color code for resistor is

- BLACK = 0
- BROWN = 1
- RED = 2
- ORANGE = 3
- YELLOW = 4
- GREEN = 5
- BLUE = 6
- PURPLE = 7
- GRAY = 8
- WHIRE = 9
- SILVER = 10% precision resistor
- GOLD = 5% precision resistor

5% and 10% resistors have 3 black bands and 1% have 4 black bands. The last band before the precision band is a logarithm indicator. This means a number of zero's that must be added after the first 2 digits for 5% and 10% resistors or first 3 digits for 1% resistors.

In the example below a 5% resistor have been selected then rotated by +90° and colored to 12Kohm value.



Saving a project

When saving a project a subdirectory with same name as project is created. This directory contain the **project.bvp** file as well as all components bitmaps used by the project. The components bitmaps are named **component-n.bmp** where **n** is the item index of the position of component in the **CircuitList:TFPList** field of application **formMain** object. Project file is a Windows ***.ini** file. Hence it can read an modified in the text editor.