UniOP Touchscreens & Special Pages and Page Modes

Two major changes in the new release of the software are the additions of the *TouchScreen* pull down menu and the item *Special Pages and Page Modes* in the *Page* menu. The *TouchScreen* pull down menu adds many new features which aid the user in programming touchcells. The menu item *Special Pages and Page Modes* enables the user to add any combination of static text and touchcells to the special pages used in each operating mode of the UniOP panel.

Note that if the *TouchScreen* menu is not visible, the user can select *Panel Setup* from the *Project* menu and select the *Touchscreen support* check box to enable the *TouchScreen* menu.

The TouchScreen Menu

The menu items located within the *TouchScreen* menu include *Show Touchscreen Grid*, *Show Touchscreen Cells*, *Create New Touch Cell*, *Delete All Touch Cells*, and *Select Touch Font*. With the addition of this menu also comes two new icons located in the *Extra ToolBelt*; *Show/Hide Touch Cells* and *Create Touch Cell*. These additions give the user the ability to easily create and configure touchcells.

Touchcells can also be easily moved and resized. To move a touchcell, simply single click on it to select it and drag the touchcell to the desired location. To resize a touchcell, first single click on it to select it. Use one of the selection handles to alter the size of the touchcell. The screen capture shown below depicts a selected touchcell and an unselected touchcell. Note that the handles present on the selected touchcell are darker than those that are present on the unselected touchcell. This is done by design so that if the user has a graphic associated with a touchcell, the selected object can be distinguished from the unselected one (see Figure 1).

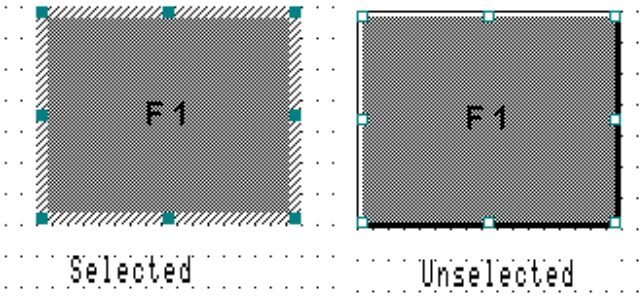


Figure 1

Show Touchscreen Grid

Selecting this option will produce a grid on the monitor, giving the user a guideline area in which to create touchcells. This is very beneficial when using one of our panels whose hardware touch grid does not have character size resolution. In these cases, this feature provides the only means of knowing the true boundaries of the touchcell area. This option may be toggled on and off by selecting it from the *TouchScreen* menu.

Show Touchscreen Cells

Choosing this option will display all of the configured touchcells, as well as any text and graphics that are associated with them. This option may be toggled on and off by either selecting it from the *TouchScreen* menu or by clicking on the appropriate icon in the *Extra ToolBelt*. When it is toggled off, all of the graphics and text associated with each touchcell, as well as the touchcell, will be hidden. Likewise, when it is toggled on, all of the graphics and text associated with each touchcell, as well as the touchcell, will be visible. When the project page is heavily populated with touchcells and data fields, having this option toggled off will allow the user to type freely on the entire screen. This eliminates the necessity of pressing the *Shift* key and clicking the left mouse button when the user wishes to type text in an area where a touchcell is located.

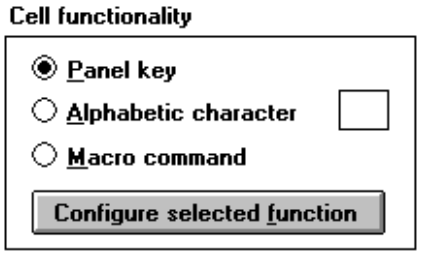
Create New Touch Cell

Selecting this option allows the user to configure cell functionality (whether the key functions as a panel key, a macro command, or an alphabetic key), cell graphics (whether or not graphics are to be placed on the touchcell), and press indication (what type of attribute the touchcell is to have applied to it when it is pressed; either none, reverse, highlight, or blink).

If the user has an analog touchscreen, new cells can be created anywhere on the screen by simply highlighting the area on the screen where the touchcell is to be placed and then either selecting *Create New Touch Cell* from the *TouchScreen* menu or by clicking on the appropriate icon in the *Extra ToolBelt*. Existing cells may be reconfigured by double clicking on the cell with the left mouse button. In either case, a dialog box will appear allowing the user to configure the touchcell. Descriptions of the functionality of each portion of the *Configure Touchscreen Cell* dialog box are given on the following pages. Following these descriptions are examples of how to physically use the different features.

Note: Users with our digital touchscreens can not use this option to create touchcells. The touchcells on these screens will remain in a pre-determined fixed location as before, and only their functionality can be configured.

Cell Functionality



A touchcell may be configured as a *panel* key, an *alphabetic character*, or a *macro command*.

- *Panel keys* represent all of the function keys, numeric keys, and arrow keys, as well as the help key, the clear key, the enter key, the +/- key, and the decimal point key.

- *Alphabetic characters* represent all of the upper case and lower case letters. **This allows the the user to enter alphanumeric characters in data entry mode.**

- *Macro commands* represent all of the elementary macro commands that are available from the keyboard macro editor.

Press Indicator

The different radio buttons within this group box represent the attribute that the touchcell will have whenever it is pressed. Note that the press indicator can be used with touchcells that have graphics associated with them; however, attributes can best be seen on touchcells that are not associated with graphics.

- *None* - There will be no attribute associated with the touchcell when it is pressed and the user *will not* be able to tell when the key has been pressed. Therefore, this option should be used only when there are graphics associated with a touchcell.

• *Reverse* - A touchcell having this attribute will have its colors inverted upon being pressed. For example, if the touchcell has a black border with black text and a light background when it is *not pressed*, it will have a white border with white text and a dark background when it is *pressed* (see Figure 2).

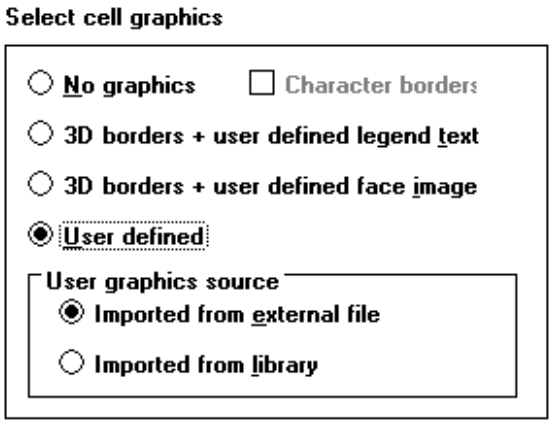
Not Pressed *Pressed*

Figure 2

• *Highlight* - With this attribute, the touchcell will toggle between two appearances when it is pressed. These appearances are a combination of the reverse attribute and the blink attribute.

• *Blink* - When the touchcell is pressed, it will alternate between the appearance of a normal touchcell and a blank screen.

Select Cell Graphics



The user has the capability of implementing graphics with their touchcells. The different possible choices are:

- *No graphics, no character borders*
- *No graphics, character borders*
- *3D graphics + user defined legend text*
- *3D graphics + user defined face image*
- *User defined*

The first option, *no graphics, no character borders* will create a touchcell that is entirely invisible. An example of the functionality of this feature is as follows. A user may have a graphic that encompasses the entire screen. For descriptive purposes, let's say that this graphic represents a control process in a factory. It contains images of flow control valves, motors, and blowers. By using this option, the user can create touchcells on the separate images and configure them to perform certain tasks. For instance, if the user presses the touchcell that is on the image of the motor, the motor may turn on. If the user presses the touchcell that is on the image of a valve, the valve may close, etc. All that will be seen on the screen will be the image of the process; the touchcells will be invisible.

If *no graphics, character borders* is chosen, a touchcell will be created that is visible only by the border that surrounds it's outer limits. The user can choose between two borders, which are shown in Figure 3.

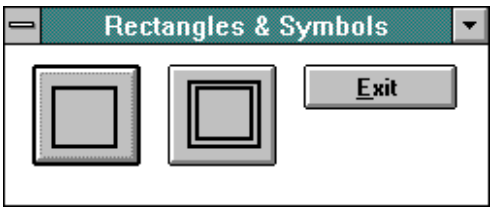


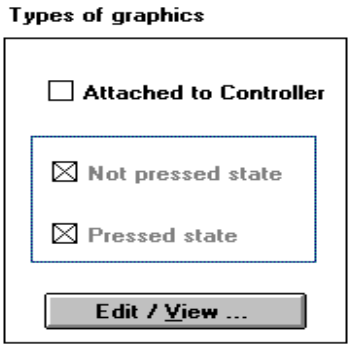
Figure 3

Choosing *3D borders + user defined legend text* gives the user the ability to implement a touchcell with text and 3D borders. The 3D border will give the touchcell the appearance that it is moving into the panel when it is pressed. This allows the cell to appear that it is three dimensional (having height, width, and depth) as opposed to being two dimensional (having only height and width). The text that appears on the face of the touchcell must be entered by the user.

Selecting *3D borders + user defined face image* allows the user to specify the image that appears on the face of the touchcell. The 3D border will have the same characteristics as the border that was discussed above in *3D borders + user defined legend text.* The image that is selected will appear on the touchcell in both the *pressed* and *not pressed* states.

If *User defined* is chosen, the user can select the source of the graphic that is to be used on the face of the touchcell. This feature gives the user the ability to import separate graphics for the *pressed* and *not pressed* states. These graphics can be imported either from an external file or from a library.

Types of Graphics



There are two different selections available from within the *Types of graphics* group box. The first, *Attached to Controller*, allows the user to attach the graphic to a bit in the controller. This option is available whenever the *3D borders + user defined legend text* radio button, *3D borders + User defined face image* radio button, or the *User defined* radio button is selected. Whenever you use this option with either of the *3D borders* graphics options, an LED indicator will be present on the graphic. This indicator will be 'on' whenever the controller memory location
that the graphic is referenced to is in the on state (a value of 1 in the controller memory location corresponds to the *on* state, while a value of 0 corresponds to the *off* state). The other selection, *Not pressed state* and *Pressed state*, is only available when the *User defined* radio button is selected. This allows the user to select the image that is to be displayed on the face of the touchcell whenever the cell is pressed, as well as when it is released.

Delete All Touch Cells

This feature allows the user to remove all of the touchcells on the current page, along with any associated graphics and commands.

Select Touch Font

This feature allows the user to select the font that will be used on the faces of the touchcells. Note that this is a *global* font, therefore the user may have only *one* touch font per project.

Examples

The following examples describe how to physically program a touchcell using the options presented in the Configure Touchscreen Cell dialog box. In all of these examples, a press indicator of none is used. If you desire a different press indicator when creating your touchcells, simply select the one you wish to use and configure your touchcell.

Example 1
This example will create a touchcell and configure it as a panel key (F3) with no graphics and no character borders.

1. Highlight the area in which you wish to place the touchcell.
2. Either select *Create New Touch Cell* from the *TouchScreen* menu or click on the appropriate icon in the *Extra ToolBelt*.
3. This will bring up the *Configure Touchscreen Cell* dialog box. Click on *Panel key* from within the *Cell functionality* group box. Once you do this, click on the *Configure selected function* button.
4. Another dialog box will appear, allowing the user to select which key is to be created as a touchcell. In this example, we are using the *F3* key. To choose this key, single click on it with the left mouse button and click on the *OK* button. Notice that when you click on the *F3* key, it turns a different color than the other keys. This is a visual indicator that allows the user to know which key is selected.
5. Now that the key has been selected, we need to choose the graphics that we are going to use. In this example, we are going to use *no graphics, no character borders*. Click on the *No graphics* radio button from within the *Select cell graphics* group box. Make sure that the *Character borders* check box is *unchecked*.
6. Clicking on the *OK* button will complete the configuration of the touchcell and return the user to the page editor workspace. To enter text within the cell boundary, simply hold down the *shift* key on your keyboard and single click the left mouse button on the location in which you wish to begin entering text.

Example 2
This example will create a touchcell as an alphabetic character (the letter c) using no graphics and character borders. **The alphabetic character option enables the user to enter alphanumeric data.**

1. Highlight the area in which you wish to place the touchcell.
2. Either select *Create New Touch Cell* from the *TouchScreen* menu or click on the appropriate icon in the *Extra ToolBelt*.
3. This will bring up the *Configure Touchscreen Cell* dialog box. Click on the *Alphabetic character* radio button. A cursor will appear in the box located to the right of this radio button. Enter the alphabetic character that you wish to use (in this example, the letter c).
4. Select the *No graphics* radio button from within the *Select cell graphics* group box. Make sure that the *Character borders* check box is checked. After doing this, click on *OK*.
5. Following this, a dialog box will appear that allows you to select which border you wish to use. Select the desired border and click on the *Exit* button. This will complete the configuration and return you to the page editor workspace. To enter text within the cell boundary, hold down the *shift* key on your keyboard and single click the left mouse button on the location in which you wish to begin entering text.

Example 3

This example will create a touchcell as a macro command ('Go to page 2') using the graphics option 3D borders + user defined legend text.

1. Highlight the area in which you wish to place the touchcell.
2. Either select *Create New Touch Cell* from the *TouchScreen* menu or click on the appropriate icon in the *Extra ToolBelt*.
3. This will bring up the *Configure Touchscreen Cell* dialog box. Select the *Macro command* radio button within the *Cell functionality* group box. Once you do this, click on the *Configure selected function* button.
4. Another dialog box will appear (see Figure 4) that contains the same elementary macro commands that are present when using the keyboard macro editor. We want the panel to go to page 2 whenever the key is pressed. Click on the *Pressed* radio button beside of *Key states*. Then, click on the icon that represents the *Go to page* command. Doing so will bring up a dialog box that allows you to enter the page number you wish the panel to go to whenever this key is pressed. Enter the number 2 and select *OK*. This will return you to the dialog box shown below. Clicking on *OK* from here will bring up the *Configure Touchscreen Cell* dialog box.

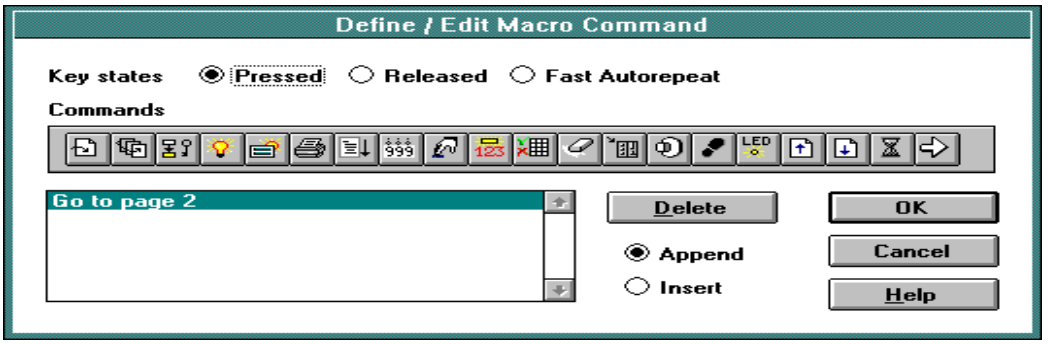


Figure 4

5. The cell is configured for functionality. Now the graphics need to be set up. Select the *3D borders + user defined legend text* radio button from within the *Select cell graphics* group box. Now you may either click on *OK* or the *Edit/View* button. Either one will bring up a dialog box (shown in Figure 5) in which you can enter the text that is to appear on the face of the touchcell. By pressing the Tab key on the keyboard, you can see how the text will appear on the touchcell. If you chose to click on *OK* to get into this dialog box, then clicking on *OK* again will return you to the page editor workspace. If you chose to use the *Edit/View* button, then selecting *OK* will bring up the *Configure Touchscreen Cell* dialog box. Choosing *OK* from here will then return you to the page editor workspace.

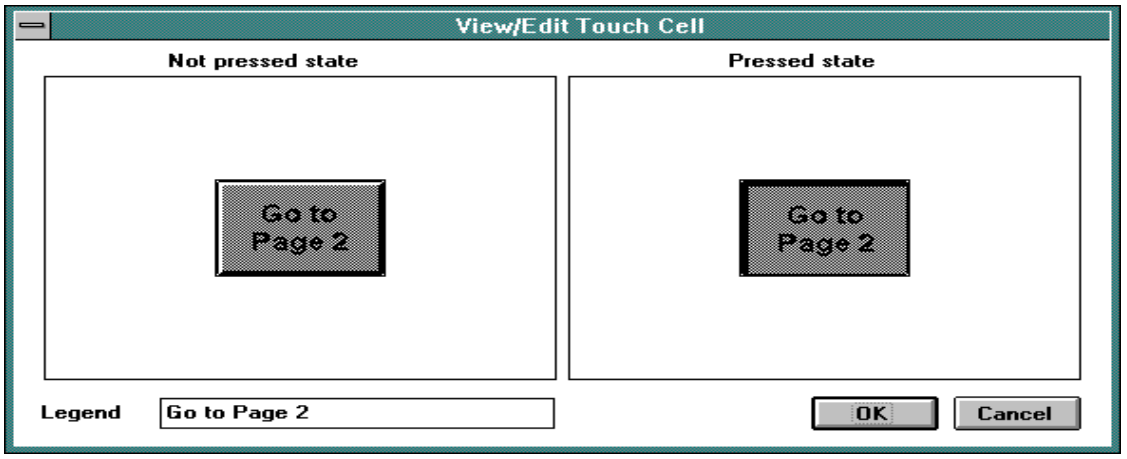


Figure 5

Example 4

This example will create a touchcell as a panel key (F2), using the graphics option 3D borders + user defined face image.

1. Highlight the area in which you wish to place the touchcell.
2. Either select *Create New Touch Cell* from the *TouchScreen* menu or click on the appropriate icon in the *Extra ToolBelt*.
3. Click on the *Panel key* radio button from within the *Cell functionality* group box. Then click on the *Configure selected function* button.
4. Another dialog box will appear, allowing the user to select which key is to be created as a touchcell. In this example, we are using the *F2* key. To choose this key, single click on it with the left mouse button and click on the *OK* button. Notice that when you select the *F2* key, it turns a different color than the other keys. This is a visual indicator that allows the user to know which key is selected.
5. Select the *3D borders + user defined face image* radio button from within the *Select cell graphics* group box. This will enable both of the radio buttons contained within the *User graphics source* group box. The user can choose to have the graphic imported from the graphics library or from an external file. Choose the proper radio button (in this example, we will use a graphic from the library) to select the source of the graphic. Once the source is selected, click either on *OK* or on the *Edit/View* button.
6. This will bring up a dialog box (see Figure 7) in which the user can choose to load the face image. Click on the *Load button face image* button. This will bring up the dialog box shown in Figure 6 in which the user can select the graphic to be used.

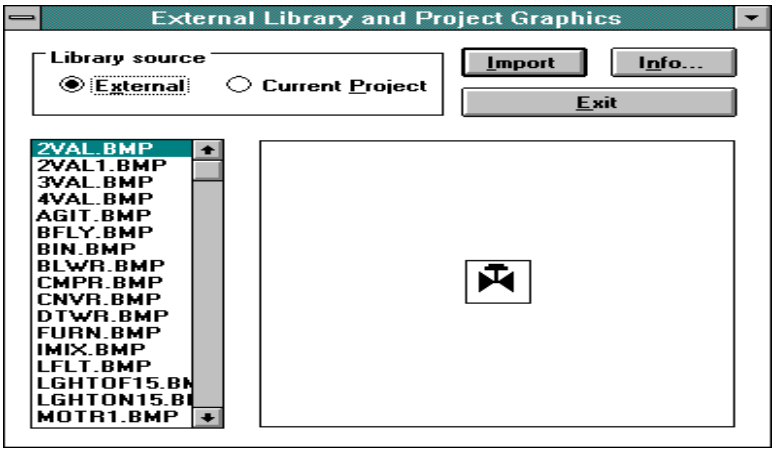


Figure 6

7. Select the graphic you wish to use and click on the *Import* button. This will bring up a dialog box that allows you to select imaging and dithering options, as well as the label for the graphic. You may choose to accept the default options or change them. Selecting *OK* will return you to the dialog box shown below in which you can see what the touchcell will look like in both the pressed and not pressed states.

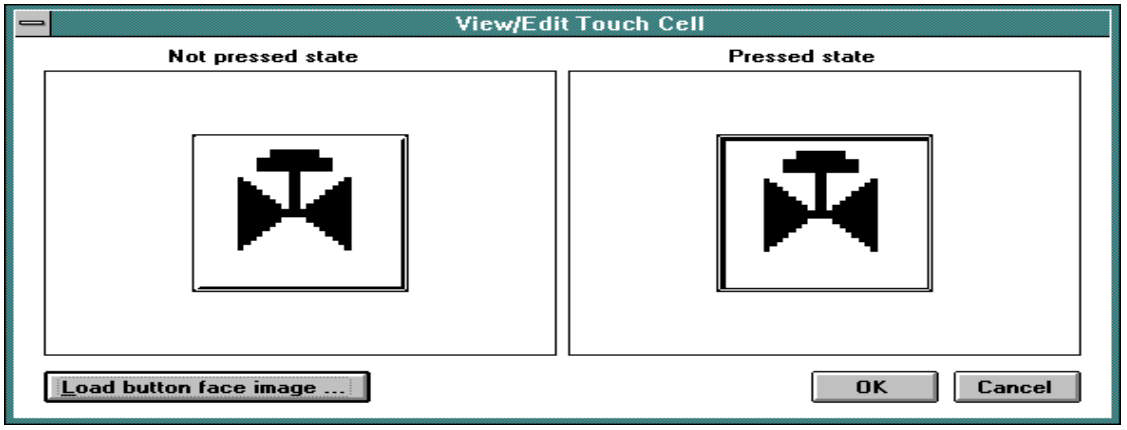


Figure 7

8. Confirming your selection by clicking on *OK* will return you to the page editor workspace. If you chose to use the *Edit/View* button in step 5, you will be taken to the *Configure Touchscreen Cell* dialog box instead. Selecting *OK* from within this dialog box will return you to the page editor workspace.

Example 5

This example will create a touchcell as a macro key ('Write to Controller') using the User defined graphics option, as well as having the graphic attached to the controller. Let's assume that whenever a bit in the controller memory gets a value of 1, a light will come on (controller state on). If the bit has a value of 0, the light will be off (controller state off).

1. Highlight the area in which you wish to place the touchcell.
2. Either select *Create New Touch Cell* from the *TouchScreen* menu or click on the appropriate icon in the *Extra ToolBelt*.
3. This will bring up the *Configure Touchscreen Cell* dialog box. Click on the *Macro command* radio button from within the *Cell functionality* group box. After you do this, click on the *Configure selected function* button.
4. Another dialog box (shown below in Figure 8) will appear that contains the elementary macro commands that are present when using the keyboard macro editor. We want to write a value to the controller whenever the key is pressed. Select the *Pressed* radio button beside of *Key states*, then select the icon that represents the *Write value to Controller memory* command. The user will be asked for the memory location in which to write to, as well as the value to be written. In this example, we want to write a value of 1 to the controller in order to turn on the light.

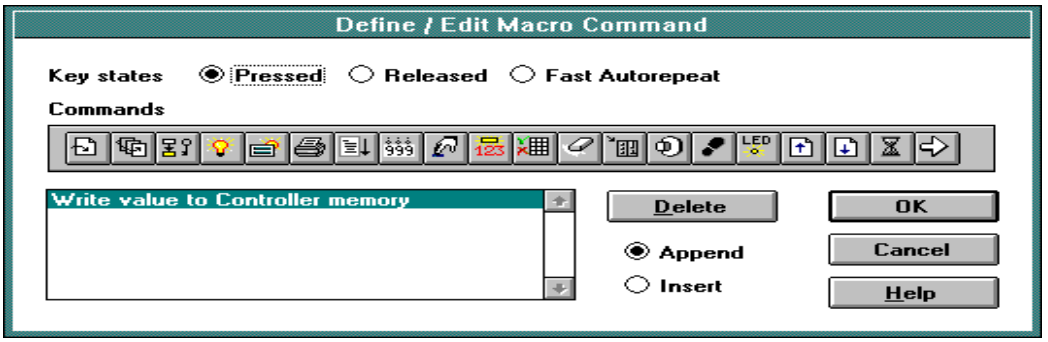


Figure 8

5. Select the *User defined* radio button from within the *Select cell graphics* group box. This will enable the radio buttons that are found within the *User graphics* source group box. These radio buttons allow the user to specify the source of the graphic, either from an external file or from the graphics library. For this example, we are going to use a graphic from the graphics library. Select the radio button entitled *Imported from library*. Also click on the *Attached to Controller* check box located within the *Types of graphics* group box. Now click on either *OK* or the *Edit/View* button.
6. This will bring up a dialog box (see Figure 9) in which you are able to import a graphic for the controller state off and controller state on. Click on the *Load image* button underneath the Controller state off display box to load the graphic. This will bring up the dialog box that is shown in Figure 6.
7. Select the graphic you wish to use and click on the *Import* button. This will bring up a dialog box that allows you to select imaging and dithering options, as well as the label for the graphic. You may choose to accept the default options or change them. Selecting *OK* will

bring up the dialog box shown in Figure 9. Clicking on the *Reference* button allows the user to associate the graphic with a specific memory location in the controller.

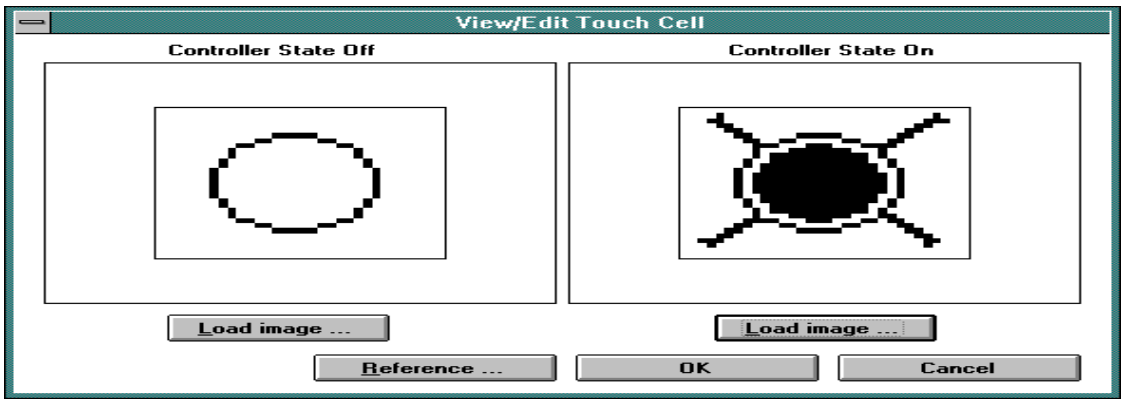


Figure 9

8. Once you have specified the memory location you wish to use, you will be returned to the dialog box shown above in Figure 9. Selecting *OK* from within this dialog box will take you to the page editor workspace. If you chose to click on the *Edit/View* button in step 5, you will be taken to the *Configure Touchscreen Cell* dialog box instead. Choosing *OK* from within this dialog box will return you to the page editor workspace.

Example 6

This example will create a touchcell as a panel key (F1) using user defined graphics.

1. Highlight the area in which you wish to place the touchcell.

2. Either select *Create New Touch Cell* from the *TouchScreen* menu or click on the appropriate icon in the *Extra ToolBelt*.

3. This will bring up the *Configure Touchscreen Cell* dialog box. Click on the *Panel key* radio button located within the *Cell functionality* group box. After you do this, click on the *Configure selected function* button.

4. This will bring up a dialog box in which you can select the key you wish to create as a touchcell. Single click on the *F1* key and click on *OK*. The *F1* key will turn a different color from all of the other keys. This is a visual indicator that allows the user to tell which key is selected.

5. Now we need to define the graphics for this touchcell. Click on the *User defined* radio button located within the *Select cell graphics* group box. Doing so will enable the radio buttons that are found within the *User graphic source* group box. Since we are using a graphic that is found in the graphics library, click on the radio button entitled *Imported from library*.

6. This should enable the check boxes *Not pressed state* and *Pressed state*. Make sure that the *Attached to Controller* check box is not checked. If it is, then the *Not pressed state* and *Pressed state* check boxes **will not** be enabled. You may choose which states you wish to define a graphic for by selecting either *Pressed state*, *Not pressed state*, or both. In this example we will define a graphic for both states. After they are both checked, either click on

OK or the *Edit/View* button.

7. This will bring up a dialog box (see Figure 10) in which you are able to import graphics for both the pressed and not pressed states. Click on the *Load image* button underneath of the *Not pressed state* box. This will bring up the dialog box that is shown in Figure 6.

8. Select the graphic that you wish to use and click on the *Import* button. This will bring up a dialog box that allows you to select imaging and dithering options, as well as the label for the graphic. Once these have been selected, click on *OK*. This will return you to the dialog box that was initially present upon entering step 7.

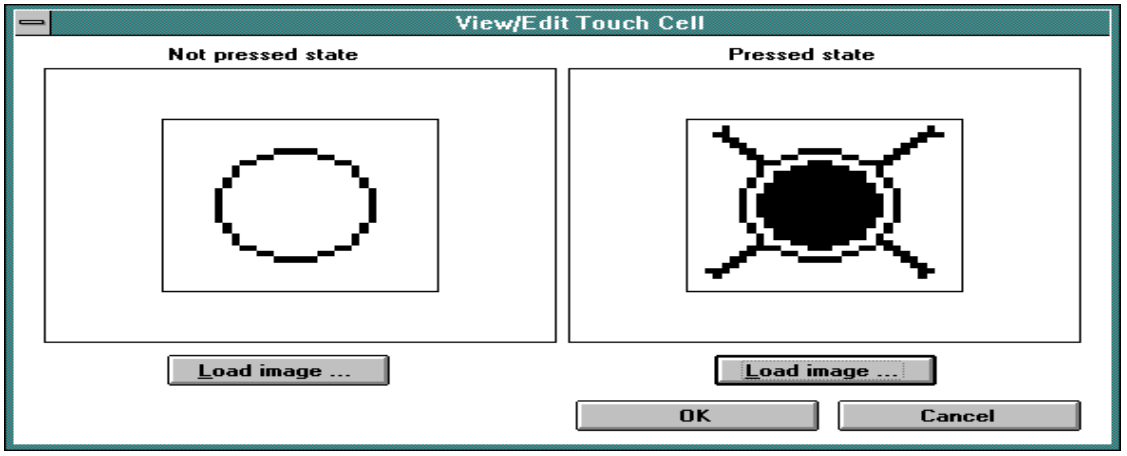


Figure 10

9. Repeat steps 7 and 8 for the *Pressed state*. Clicking on *OK* from within the dialog box (see Figure 10) will return you to the page editor workspace. If you chose to use the *Edit/View* button in step 6, you will be taken to the *Configure Touchscreen Cell* dialog box instead. Selecting *OK* from within this dialog box will return you to the page editor workspace.

Warning & Error Messages

There are two *warning* messages that are related specifically to touchscreen panels. These two warning messages will occur when:

- A user tries to download a project that contains touchcells to a non-touchscreen panel
- A user tries to download a project that does not contain touchcells to a touchscreen panel.

Once the message appears on the screen, the user will still be permitted to download the project file.

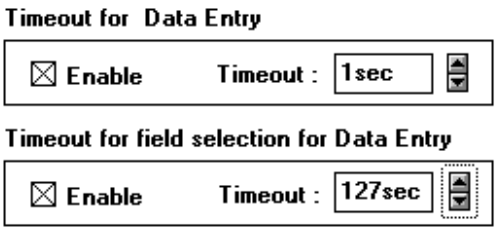
There is one *error* message related specifically to touchscreen panels. This warning will occur when a user tries to download a project file that contains touchcells to a panel with different display dimensions than the one for which the project file was created. For example, if the user creates a project file with touchcells for a 25 line panel and then tries to download this file to a 16 line panel, the error message will appear. **If the project file is downloaded, all of the touchcells created will be deleted**

Special Pages and Page Modes

The items located within the *Special Pages and Page Modes* portion of the *Page* menu include *Data Entry Screen, Command Menu, System, Passwords, Direct Access, Direct Page Selection, Time & Date, Alarm Page, Event Page,* and *Current Page Mode*. This option allows the user to place any combination of static text and touchcells on these pages. Note that these items should be placed on the lower portions of the page, due to the fact that these modes reserve some of the area contained in the upper portions of the page for display information.

Whenever the panel enters *Password* mode or *Data Entry* mode, a default numeric keypad will appear on the screen. In all of the other modes, a row of default keys will appear that contains the arrow keys, an enter key, and a clear key. If the user wishes to create their own screen that contains static text and touchcells, they may do so by selecting *Special Pages and Page Modes* from the *Page* menu. **Please be aware that a screen created in any of the panel's special pages will result in the default keys for that mode not being displayed**. For this reason, care should be taken to ensure that the user always has a method of getting back into Configuration Mode (i.e., create an ENTER key on all of the special pages that are modified).

Another feature that has been added in regard to data entry mode is the ability to have the panel return to operation mode if no keys are pressed after a specified time. These options can be set by selecting *Panel Setup* from the *Project* menu and clicking on the button labeled *Misc. Setup*. Doing so will bring up a dialog box, part of which is shown below.



The *Timeout for Data Entry* item will return the panel to operation mode if no keys are pressed within a user specified amount of time (between 1 second and 127 seconds).

The *Timeout for field selection for Data Entry* will return the panel to operation mode if no field is selected within a user specified amount of time (between 1 second and 127 seconds).