Free Emboss Filter for AVX
Boris CONTINUUM Complete for AVX Version 1.0 Free Emboss Filter

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Boris CONTINUUM Complete Overview

Boris CONTINUUM Complete is a comprehensive set of over 90 powerful yet easy-to-use filters for users of Avid. The package provides an extensive array of creative possibilities that work in the native Avid Effects mode. Each filter in some way alters a source image or video clip, and some can even create new media. A filter can create something as simple as a color adjustment in your image, or as complex as shattering an image in three dimensions. All the filters offer a range of parameters which can be animated using keyframes, providing precise control over effects. For more information on Boris CONTINUUM Complete for AVX, please visit our website at www.BorisFX.com.

The Emboss filter simulates the appearance of an embossed or raised image by converting the source to a solid color and lighting the edges in the source’s luma channel.

Installing Boris CONTINUUM Complete in Avid Systems

This section provides information on installing and applying Boris CONTINUUM Complete inside Avid systems.

Installing on a Macintosh System

The version of BCC AVX 1.0 does not support OS X. If you are running a version of Avid with OS X, please contact Boris technical support.

1. Launch the Boris CONTINUUM Complete AVX Installer application. Click Continue.
2. Read the Software License Agreement. Click Agree.
3. Enter your name and organization. Click OK.
4. An install window appears with Boris CONTINUUM Complete for Avid AVX already selected. Choose Install.
5. Once the installation is complete, click Quit.

Installing on a Windows System

1. To correctly install BCC AVX on Windows XP systems, you must log on to your XP system as an Administrator.
2. Launch the Boris CONTINUUM Complete AVX Installer application. The BCC AVX installer automatically displays a Welcome to Boris CONTINUUM Complete window. Click Next.
3. Read the Software License Agreement and click Yes.
4. Enter your name and company name. Click Next.
5. Confirm the user information data you entered in the Registration Confirmation window that appears. If you need to make changes, click No, re-enter the information, and click Next. When you are done, click Yes.

**Applying Boris CONTINUUM Complete Filters**

Once Boris CONTINUUM Complete is installed, the effects automatically appear in the Effects Palette. The Boris CONTINUUM Complete filters are arranged alphabetically, by category in the Effects Palette.

Some effects can be applied as either a transition or a filter. If an effect can be applied as a transition, it appears in the BCC Transition category. For example, to apply a Blur as a filter, choose BCC Blur from the BCC Color & Blurs category. However, to apply a Blur as a transition, you would choose BCC TR Blur from the BCC Transitions category. For more information on transitions, see “Applying BCC Effects as Transitions” on page 6.

You can also apply BCC effects to titles created in the Avid Title tool. For more information, see “Applying BCC Effects to Avid Titles” on page 9.

1. Choose Effect Palette from the Tools menu.

2. Click to select the Boris CONTINUUM Complete effect category on the left.

3. Choose the appropriate effect on the right.

4. Drag the icon for the desired effect onto a clip or transition.

5. Enter Effects mode and adjust the effect parameters. See “Working in Boris CONTINUUM Complete” on page 11 for more information.

Boris effects render exactly the same as Avid effects. For more information, consult your Avid documentation.
Applying BCC Effects as Transitions

BCC provides two methods to use effects as transitions. The first method is to apply a BCC transition effect to the transition between two clips. The second method is to overlap two clips and apply a BCC filter effect to each layer. Each method offers advantages.

To use the first method, simply drag a BCC Transition effect onto the transition between two clips. When you do this, BCC Transitions apply the same static default values as the filter versions. Since the transitions do not auto animate, you must keyframe parameter values to transition from the unfiltered outgoing shot to the unfiltered incoming shot. Once you animate transitions, you can save the effect template to a bin and use the saved effect as a default. For more information, see “Saving Effect Templates in a Bin” on page 19.

When you use BCC Transitions, parameters only apply to the outgoing clip. However, you can animate the Layer Opacity to reveal the incoming shot. For example, filters that include a foreground and background like Page Turn can be animated so that the Page peels away to reveal the incoming shot. For effects that do not include a foreground and background, for example a Ripple, you can animate the effect from no ripple to a rippled image on the outgoing shot. Animating the Layer Opacity will then fade out the rippling clip to reveal the incoming shot.

The BCC Transitions offer the convenience of an Avid transition. For example trimming and duration changes are easily made and you only have to render a single effect. However, to create a wider range of transition effects, you can use the second method: overlap two clips and apply a filter to each layer. This method provides greater control over effect parameters. The following steps outline this method.

The free Emboss filter does not include a BCC Transition effect. You have to use the second method to use the Emboss filter as a transition.

1. Place the outgoing shot on V2 and the incoming shot on V1. Overlap the clips for the duration that you want your transition.

   The outgoing shot must be on a track higher in the timeline than the incoming shot to properly reveal the incoming shot.

2. Create Add Edits around the section that you want to transition. In the following example, a one second section will be used as a transition between the Racers and Drivers clips.
3. Apply the appropriate BCC effect to the top track and enter Effects Mode. In this example, a BCC Ripple will be added to the Racers clip.

4. For effects that include a Background menu, choose 1st Below.

5. Move the position indicator to the midpoint between the two clips, in this example 15 frames into the effect. Create a keyframe at this point.

   In this example, you want the Racers clip to start unrippled, then gradually ripple as it dissolves out. In most instances, you will want the clip to start unfiltered at the Add Edit and then gradually animate into the filter.

6. Select the first keyframe and set the effect parameters so that there is no effect. This prevents the effect from jumping in at the Add Edit. In this example, the Ripple Height, Perpendicular Height and Wave Width parameters were all set to 0.

7. Select the last keyframe and set the Layer Opacity parameter in the General Controls parameter group to 0. The effect now animates from fully opaque at the middle keyframe to fully transparent at the last keyframe.

8. Drag the Effect icon from the Effect Editor to the V1 track. This copies the effect on V2 to the V1 track. When you finish, your timeline should look like the following example.

9. Select the middle keyframe and set the Layer Opacity parameter in the General Controls parameter group to 50.

10. Select the last keyframe and set the Layer Opacity parameter in the General Controls parameter group to 100.

11. Set the effect parameters at the last keyframe so that no effect is visible. This prevents the effect from jumping at the Add Edit.

    In this example, the Ripple Height, Perpendicular Height and Wave Width parameters were all set to 0.

12. Render the two effects just as you would any Avid effects.

    The following examples illustrate the difference between applying an effect as a transition and transitioning between two filters.
In the following examples, the ripple was applied to a transition instead of as a filter on two clips. Notice that only the outgoing Racers clip ripples, but the incoming Drivers clip simply dissolves in.
Applying BCC Effects to Avid Titles

To apply a BCC effect to a title created in the Avid Title tool, drag the effect onto the title. If you Option-drag to the effect, the effect is applied to the title as well as to any tracks beneath the title in the timeline. For example, to apply a blur to a title, drag the BCC Blur effect onto the title. To apply a blur to a title and the background video, Option-drag the BCC Blur effect to the title.

Applying a BCC filter to an Avid title is a destructive process that replaces the Avid title effect in the timeline. To edit the title as text (for example to change text characters or font), you need to reopen the original title saved in a bin. However, you can reposition the title, using the Geometrics parameter group. For more information, see “Working with the Geometrics Parameter Group” on page 13.

When applying a BCC filter to an Avid title or matte key, the Background menu in the General Controls parameter group defaults to 1st Below which results in the title effect keying over the track that was the original background in the timeline. However, 2nd Below (not 1st Below) in an alternate Layer menu is actually the video background. For example, to displace a title using the video background as a Displacement Map, you set the Map Layer menu to 2nd Below (rather than 1st Below). The effect references the nested Graphic Fill as the 1st Below layer.

Enabling the Bypass Effect checkbox does not display the original title unfiltered and keyed over the background video, but rather displays the nested Graphic Fill of the matte key.

Some presets do not create the intended effect when applied to a title.

1. Drag the appropriate effect onto a title.

2. Select the Apply to Title-Matte checkbox in the General Controls parameter group. When the Apply to Title-Matte checkbox is selected, it turns pink.

3. If you are working with a BCC Blur filter, you need to deselect the Opaque Source checkbox in the Controls 1 parameter group. You can now adjust the effect as usual.

Because applying BCC effects to a title or matte key is a destructive process, removing a BCC effect also removes the title’s nested alpha channel. To remove a BCC effect and preserve the title, use the Undo command instead of the Remove Effect button.
Rendering Boris CONTINUUM Complete Effects

Boris effects render exactly the same as the native Avid effects. You can render effects individually or render in to out. In addition, if you redigitize material, you simply rerender any effects; all parameters are preserved. For more information, consult your Avid documentation.
Working in Boris CONTINUUM Complete

This section provides information on using the Avid user interface with Boris CONTINUUM Complete. This section applies to Symphony, Media Composer, XPress, XPress DV and NewsCutter systems.

Working with Parameter Groups

Each CONTINUUM Complete filter has parameter controls which are categorized into groups. Groups of parameters appear under a text header next to a disclosure triangle. The illustration at right includes several parameter groups—Black Color, Midpoint Color, and White Color. The White Color group is expanded, revealing its parameters.

Clicking the disclosure triangle to the left of a text header expands the parameter group, revealing its contents. Click the triangle a second time to close the group.

Working with the Preset Menu

Load and Save controls are available in each filter in a Preset menu. The Preset menu allows you to save filter settings independently of the media or project. This feature allows you to save favorite filter settings and apply them to multiple projects. Presets are static. All parameter values in the first keyframe are applied.

For more information on Presets, see “Working with Presets” on page 18.
Working with the General Controls Parameter Group

Most filters contain a General Controls parameter group. This parameter group includes a **Background menu**, **Bypass Effect checkbox**, **Safe Colors checkbox**, **Draft Mode checkbox**, **Apply to Title-Matte checkbox**, **Invert Matte checkbox**, **Layer Opacity slider**, a **Field Rendering menu** and a **Rebuild Parameter Cache checkbox**. Not all filters include all parameters. The parameters are described below.

Parameters in the General Controls parameter group are not saved when you save effects as presets. If you want to save General Controls parameters with your presets, save the effect to a bin.

![General Controls](image)

For more information on presets, see “Working with the Preset Menu” on page 11.
For more information on saving effects to a bin, see “Saving Effect Templates in a Bin” on page 19.

At times, you may want to view your clip without the effect that you’ve applied. The **Bypass Effect checkbox** lets you view the source footage without the effect. When the Bypass Effect checkbox is selected, it turns pink. When you applied a BCC effect to an Avid title or matte, enabling the **Bypass Effect checkbox** does not display the original title unfiltered, but rather displays the nested Graphic Fill of the matte key.

Bypass Effect is a parameter change; selecting the Bypass Effect checkbox will unrender a rendered effect. To bypass a rendered effect without unrendering, step into the effect in the Avid timeline to see the unaffected video.

Selecting the **Safe Colors checkbox** enables an NTSC/PAL color-safe filter that allows only colors that are safe for broadcast. BCC allows RGB values across the full 0-255 range. When this checkbox is selected, the RGB values are limited to the NTSC/PAL safe range of 16-235.

The **Draft Mode checkbox** allows you to preview your effect in a Draft Mode to speed previews. This is especially useful for effects with multiple track inputs. Deselect this option before rendering your effect.

The **Apply to Title-Matte checkbox** allows you to apply BCC filters to titles created in Avid’s Title tool. To apply an effect to a title, drag the effect onto the title (you do not have to Option-drag) and select the **Apply to Title-Matte checkbox**.

For more information on applying BCC effects to Avid tiles or matte keys, see “Applying BCC Effects to Avid Titles” on page 9.

The **Invert Matte checkbox** allows you to invert any matte created by your effect. This is useful when you work with imported images.
The **Layer Opacity** slider sets the opacity of the filter layer, which allows you to fade effects. When **Apply to Title-Matte checkbox** is selected, Layer Opacity affects the graphic fill layer, which allows you to fade titles.

The **Field Render menu** sets the rendering optimization for BCC. For most filters, you can use the default of **Speed Optimized**. For effects that include edging or DVE moves, you may want to use **Quality Optimized**. Quality Optimized takes more time to render, but will generally correct any problems with jitter or rough edges on effects.

The Rebuild **Parameter Cache checkbox** forces the filter to rebuild the parameter cache. As you build certain effects, a copy of the parameters is saved or “cached.” Sometimes you need to force the filter to rebuild this cache before rendering to make sure that recent changes are included. For example, if you create an effect, exit Effect Mode and then later make changes, you should select this checkbox before rendering. The same is true for when you adjust the duration of an effect. This only applies to the Particle System, Rain, Snow, Sparks, Jitter, Looper, Posterize Time, Velocity Remap and Z Space I and II filters. When you have motion blur enabled also applies to the DVE, DVE Basic, and Sphere filters.

**Working with the Background Menu**

Many filters include a Background menu which enables you to use information from other tracks in your effect to control some aspect of the filter. The Background menu includes choices corresponding to each track in the effect, including the track to which it is applied (**Filter Layer**) and a **None** setting. When None is selected, the menu has no effect on the filter.

For example, you apply a Boost Blend filter to the V3 track in your timeline. To composite the V3 clip with the clip on V2, you would choose **1st Below**. To composite V3 with the clip on V1, choose **2nd Below**. Choosing **Filter Layer** composites the V3 clip with itself.

**Working with the Geometrics Parameter Group**

Most filters include a Geometrics parameter group that allows you to add basic DVE moves to any filter. For example, apply a BCC Blur filter to a clip and then use the Geometrics parameters to spin the blurred clip.

Parameters in the Geometrics parameter group are not saved when you save effects as presets. If you want to save Geometric parameters with your presets, save the effect to a bin.

For more information on presets, see “Working with the Preset Menu” on page 11. For more information on saving effects to a bin, see “Saving Effect Templates in a Bin” on page 19.
The Geometrics parameter group includes the following controls.

Selecting the **Enable Geometrics checkbox** allows you to use the parameters to reposition a track. When this checkbox is deselected, the other parameters have no affect.

**Position X** and **Position Y** adjust the horizontal and vertical location of the track.

**Scale X** and **Scale Y** change the size of the image along the X and Y axis, respectively. These parameters scale as percentages of the image’s original width and height. Thus, a Scale X value of 200 produces an image twice as wide as the original. Select the **Lock Scale checkbox** to keep the Scale X and Y values in proportion.

**Tumble**, **Spin**, and **Rotate** change the image’s perspective along the X, Y, and Z axes respectively. Tumble, Spin, and Rotate can animate over values greater than 360° in order to make the shape complete more than one full revolution.

The Crop controls crop the edges of the image. **Left Crop**, **Top Crop**, **Right Crop**, and **Bottom Crop** determine the width, in pixels, of the cropped area on each edge of the image.

For the Crop controls refer to the sides of the original image before it is transformed in 3D space. For example, if you tumble an image 180° so that it appears upside-down, cropping the Top affects the top of the original image, which is actually the bottom of the tumbled image.

The **Blend** control soften the edges of the image by reducing their opacity. The **Blend** parameter determines the width, in pixels, of the transparent band on each edge of the image. These values are unaffected by the Crop values, allowing you to soften the edges of an uncropped image.
Working with the Drop Shadow Parameter Group

Most filters include a Drop Shadow parameter group that allows you to add an animatable drop shadow to an effect. BCC also includes a standalone Drop Shadow filter. For more information, see “Working with the BCC Drop Shadow Filter” on page 209.

Parameters in the Drop Shadow parameter group are not saved when you save effects as presets. If you want to save Drop Shadow parameters with your presets, save the effect to a bin.

For more information on presets, see “Working with the Preset Menu” on page 11. For more information on saving effects to a bin, see “Saving Effect Templates in a Bin” on page 19.

The Drop Shadow parameter group includes the following controls.

The **Enable Drop Shadow checkbox** turns the shadow on and off. If this checkbox is not selected, the other parameters have no affect.

**Source Opacity** sets the opacity of the source. You can use this parameter to fade in a title or other source, without fading in the shadow.

**Distance** sets the distance (in pixels) between the shadow and the image.

**Intensity** sets the opacity of the drop shadow, and is scaled as a percentage. At a value of 100, the shadow is completely opaque. Lower Intensity values allow the background image to be seen through the shadow. At a value of 0, the shadow is completely invisible.

**Softness** controls the softness of the edges of the shadows. A setting of 0 produces a sharply defined shadow with hard edges. Increasing Softness produces shadows with softer edges.

**Angle** sets the direction of the drop shadow. A setting of 0° places the shadow to the right of the image; a setting of 90° places it directly below the image.

**Shadow Color** sets the color of the shadow. For information on working with color controls, see “Working with Color Controls” on page 16.
Working with Locks

Some parameters’ values can be locked together to keep their values equal when one parameter is adjusted. For example, Scale X and Scale Y controls are locked by default to preserve the image’s aspect ratio. A lock option appears before each set of parameters that can be locked together.

When the **Lock checkbox** is selected, adjusting any locked parameter also adjusts all additional locked parameters. For example, selecting the **Lock Blur** checkbox, locks **Horizontal Blur** and **Vertical Blur** together. When Lock Blur is selected and you adjust Horizontal Blur, the Vertical Blur also adjusts. When Lock Blur is deselected, you can adjust each parameter independently.

Working with Point Controls

Many Boris CONTINUUM Complete filters use point controls to specify locations along the X and Y axis in the source image. If the effect is selected in the Effect Editor, the Effect Preview monitor includes a position point icon for each point control parameter. An active Point Control is pink; an inactive control is green.

You can use several different methods to enter point control values:

- Drag the cross-hair in the Effect Preview monitor. The selected cross-hair is pink. As you drag, the slider updates.
- Drag the slider corresponding to the point control that you want to adjust. As you drag the slider, the cross-hair updates.

Working with Color Controls

Color controls are used to choose a color for some attribute of a filter or object, such as a light source or border. You can use one of three methods to adjust color parameters. Click the **Other Options button** to access the system color picker. You can also position the cursor over the Color Preview window to activate the eyedropper. Then use the eyedropper to choose a color from the screen. You can also use the R, G, B sliders to change the value in the corresponding color channel.
Working with Angle Parameter Controls

Angle Parameter controls are used to manipulate an effect’s angle or direction by dragging a treadmill representation to alter the angle or direction value. Values can be positive or negative and are not limited to a single 360 degree rotation. Shift-clicking allows you to move in increments of 1.

Understanding Contextual Controls

The AVX architecture does not support contextual controls, so parameters that do not apply are not dimmed or grayed out in the Effect Editor window. This means that a parameter that appears in the Effect Editor may not apply unless other parameters are met. For example, the Reverse Range parameter in the PixelChooser Region parameter group does not have any affect unless specific shapes are chosen in the PixelChooser Region Type menu.

Whenever possible, parameters that are inactive unless certain conditions are met have been noted in the documentation.

Resetting Effects

To reset all parameters in an effect to the default values, simply reapply the effect from the Effect Palette. Each effect also includes a default preset that you can use to reset the effect to the default values.

Understanding the PixelChooser

Many filters in Boris CONTINUUM Complete include PixelChooser parameter groups. The PixelChooser provides several methods to selectively filter an image. You can use the PixelChooser to create a matte between filtered and unfiltered pixels, either by specifying a geometric region or by using the image’s luma or color information. For example, use the PixelChooser to apply a filter to only the brightest or darkest areas of an image, depending on the luma values you set. You can also select another image to use as a Matte Layer, and use that image’s color or luma information to selectively filter the source image.

The PixelChooser also provides region controls to specify which region in the source image is filtered. You can apply a filter to any rectangular or oval-shaped region and animate the size of the region to create wipes between the source and filtered images. The PixelChooser is described in detail in “The PixelChooser” on page 451.
Working with Presets

After you apply a Boris filter and adjust the filter parameters, you can save the parameter settings by pressing the Preset menu and choosing Save. A dialog box allows you to name and save the file. Presets are only compatible with the filter in which they were created. For example, if you attempt to load an Emboss preset into a Blur filter, the preset is ignored. However, you can also save PixelChooser parameters as presets. PixelChooser presets allow you to move parameters between different filters. For information on PixelChooser presets, see “Working with PixelChooser Presets” on page 453.

NOTE for Macintosh users only: The presets folder contains a file with the extension “.rsrc.” This file is dimmed when you Load or Save presets using the Presets folder and should not be removed.

Each filter has its own settings files folder created when you install Boris CONTINUUM Complete. It is strongly recommended that you save the files in the default location on your computer. Otherwise, the filter may not be able to locate them when you try to load a settings file.

You can also save parameter settings in a bin as an Effect template, just as you save other Avid effects. Saving Effect templates in a bin lets you save animated settings. See “Saving Effect Templates in a Bin” on page 19 for more information.

Loading Preset Effects

To load a previously saved filter settings file, you must first apply the same filter to your media. A list of existing presets also appears in the menu.

Presets are static. All parameter values in the first keyframe are applied globally. In addition, parameters in the General Controls, Geometrics and Drop Shadow parameter groups are not saved with the preset. To save effects with parameters set at multiple keyframes or with General or Geometrics parameters, see “Saving Effect Templates in a Bin” on page 19.

1. Apply the appropriate filter to your media.
2. Press the Preset menu and choose Load.
3. A dialog box opens that allows you to select the file to load. Choose the appropriate effect and click Save or press Return (Macintosh) or Enter (Windows).

   The saved parameter settings are recalled and applied to your effect.
Working with the Provided Presets

Boris CONTINUUM Complete includes a selection of preset effects for each filter. These presets are an excellent way to learn the capabilities of a filter. Follow the instructions in “Loading Preset Effects” to apply these presets.

On Windows, the presets are installed in the following directory:
C:\Program Files\Avid Application folder\BCC Presets\Filter Name folder

Note: Inside the BCC Presets folder, each filter has its own folder. Place the preset inside the folder of the appropriate filter.

On Macintosh, the Presets are installed in the following directory:
System Folder/Application Support/BCC Presets/Filter Name folder

Saving Effects as Presets

You can save favorite filter settings as presets and apply them to multiple projects. Presets are static; all parameter values in the first keyframe are applied. To save effects with parameters set at multiple keyframes, see “Saving Effect Templates in a Bin” on page 19.

1. Create the appropriate filter.
2. Press the Preset menu and choose Save.
3. A dialog box opens that allows you to save the file. Name the effect and click Save or press Return (Macintosh) or Enter (Windows).

Saving Effect Templates in a Bin

You can save parameter settings in a bin as an Effect template, just as you save other Avid effects. Effect templates allow you to save effect parameters and use them again to create or modify other effects. While parameter settings saved in the Preset menu are static, Effect templates save parameters set at multiple keyframes.

To save an Effect template, drag the Effect icon from the Effect Editor window to a bin. An Effect template is saved in the bin. To rename the template, click the template name and type a new name.

The Effect Palette allows you to view and access effect templates that are stored in open bins. The names of open bins containing effect templates appear in a list below the effect categories. To view the effect templates in the bin, click the bin name. The list appears in the right side of the Effect Palette. Whenever you open or close a bin or add an effect to a bin, the list automatically updates.

Applying Effect Templates from a Bin

To apply all the values from the template, drag the Effect template from the bin to either the Timeline or the Effect Preview monitor in the Effect Editor window.
Working with the BCC Emboss Filter

Emboss simulates the appearance of an embossed or raised image by converting the source to a solid color and lighting the edges in the source’s luma channel.

The BCC Emboss filter can also be used as a transition. To apply Emboss as a transition, use the BCC TR Emboss in the BCC Transitions category or apply the filter to two layers. For more information, see “Applying BCC Effects as Transitions” on page 22.

The BCC Emboss filter includes extensive parameters for you to customize. You may need to scroll down to see them all. The illustration at right does not show all the parameters.

For information on the General Controls, Geometrics and Drop Shadow parameter groups, see “Working with the General Controls Parameter Group” on page 27, “Working with the Geometrics Parameter Group” on page 28 and “Working with the Drop Shadow Parameter Group” on page 30.

Emboss 1 Parameter Group

**Direction** sets the angle between the beam of light and the vertical axis.
**Intensity** controls the brightness of the effect. At a value of 0, the image is completely black. Higher values lighten the image.

![Intensity=4](image1.png) ![Intensity=8](image2.png)

**Pre Blur** adjusts the amount of blur applied to the image before edge detection is performed and the image is embossed. Higher values produce more blur, which tends to reduce the amount of detail and noise in the filtered image.

![Preblur=0](image3.png) ![Preblur=10](image4.png)

**Highlight Color and Shadow Color Parameter Groups**

**Highlight Color** sets the color of the highlight areas.

**Shadow Color** sets the color of the shadow areas.
**Emboss 2 Parameter Group**

**Highlight Balance** adjusts the balance of highlight and shadow areas in the effect. Increasing positive values add more highlights and brighten the image. Decreasing negative values add more shadows and darken the effect.

![Highlight Balance](image)

The **Apply Mode menu** determines how the filter is composited over the source image.

For information on the available apply modes, see Appendix: "Apply Modes," on page 469

**Apply Mix** controls the mix of the specified Apply Mode with the **Normal** apply mode. If the Apply Mode is Normal, Apply Mix has no effect. If Apply Mix is 0, Apply Mode has no effect. Increase Apply Mix to blend the Apply Mode setting with the Normal apply mode.

**Mix w/Original** blends the source and filtered images.

For information on the PixelChooser parameter group controls, see “The PixelChooser” on page 451.
PixelChooser Overview

The PixelChooser is included in many Boris filters and provides several methods to selectively filter an image. You can use the PixelChooser to create a matte between filtered and unfiltered pixels, either by specifying a geometric region or by using the image’s luma or color information.

In this example, the PixelChooser selects pixels based on the image’s Red channel. Therefore, the Spray Paint Noise filter is applied only to pixels whose Red value is highest.

In this example, the PixelChooser’s region controls are used to specify a rectangular area in which to apply the filter.

In this example, both the matte controls and region controls are used to select pixels. When the PixelChooser is selecting pixels based on both their channel values and their location on the screen, pixels are chosen only if they are fully meet both of the selection criteria.

The PixelChooser performs the same basic operations in most filters:

• The PixelChooser examines each pixel in the image and decides how to process each pixel based on its location and/or the channel values in that pixel.
• If the PixelChooser decides that a pixel not does meet the selection criteria, the source pixel is copied to the output and left unfiltered. Unfiltered pixels are black in the matte.
• If the PixelChooser decides that a pixel fully meets the selection criteria, the filtered pixel replaces the source pixel in the output. Filtered pixels are white in the matte.
• If the PixelChooser decides that a pixel partially meets the selection criteria, a mix of the source pixel and filtered pixel appears in the output. Partially filtered pixels are gray in the matte.
Working with PixelChooser Presets

After you apply a filter and adjust the PixelChooser parameters, you can save and load PixelChooser parameter settings using the **Preset menu** in the PixelChooser Parameter group. Unlike other BCC presets which are only compatible with the filter in which they were created, PixelChooser presets allow you to move parameters between filters. For example, you can load a PixelChooser preset created in the Cartooner filter into a Blur filter.

PixelChooser presets load and save the same way that BCC presets are loaded. For more information, see “Working with the Preset Menu” on page 26.

Loading PixelChooser Presets

1. Apply the appropriate filter to your media.
2. Press the **Preset menu** that is directly above the PixelChooser parameter groups and choose **Load**.
3. A dialog box opens that allows you to select the file to load. Choose the appropriate effect and click **Save** or press Return (Macintosh) or Enter (Windows). The saved parameter settings are recalled and applied to your effect.

Saving PixelChooser Parameters as Presets

1. Apply the appropriate filter to your media and adjust the PixelChooser parameters.
2. Press the **Preset menu** that is directly above the PixelChooser parameter groups and choose **Save**.
3. A dialog box opens that allows you to select the file to load. Choose the appropriate effect and click **Save** or press Return (Macintosh) or Enter (Windows).

Using the View Pixels Menu

The **View Pixels Chosen menu** offers several display options for PixelChooser Effects.

- **Off** displays the filtered effect.
- **Chosen Pixels** displays the matte created between the filtered and unfiltered pixels in black and white. The black regions of the matte represent the unfiltered pixels, and the white regions of the matte represent the filtered pixels. Gray areas represent partially filtered pixels. This is useful when you are adjusting an area that is difficult to see, for example a subtle Blur filter applied to a rectangular region.
- **Mask Unchosen Pixels** displays a 50% red mask over the unfiltered pixels.
- **View Source** shows the source of the PixelChooser matte, which may be different from the source of the filter.
Working with the PixelChooser Region Parameters

You can use the PixelChooser’s Region parameters to specify an area in which to apply a filter.

The Region Type menu determines the shape of the region in which the filter is applied. Each type has its own set of parameters which control the size and location of the region.

- **All** filters all pixels in the image, regardless of their location.
- **Inside Rectangle** filters the image inside a rectangle-shaped region.
- **Outside Rectangle** filters the image outside a rectangle-shaped region.
- **Inside Oval** filters the image inside an oval-shaped region.
- **Outside Oval** filters the image outside an oval-shaped region.
- **Distance to Point** filters the image between two specified distances from a center point.
- **Distance to Edge** filters the image within two specified distances from the edge of the frame.
- **Clock Wipe** filters the image in a region between two radial lines emanating from a center point.
- **Linear Gradient** creates a linear gradient between the filtered and unfiltered regions in the image. When Linear Gradient is selected, only the point controls and the Reverse Range checkbox in the region group are active.
- **Distance to Line** filters pixels based on the distance to the line between the two points.
- **Distance to Key Point** is similar to Distance to Point except it uses the Light Source instead of the Center point control.

These choices are described in the following sections.

The AVX architecture does not support contextual controls, so parameters that do not apply are not dimmed or grayed out in the Effect Editor. This means that a parameter that appears in the Effect Editor may not apply unless other parameters are met. For example, the Reverse Range parameter in the PixelChooser Region Parameter Group does not have any affect if the PixelChooser Region Type menu is set to Inside Rectangle.
Inside Rectangle and Outside Rectangle

*Inside Rectangle* and *Outside Rectangle* filter the image inside or outside a rectangle-shaped region, respectively.

The top X and Y position point controls determine the location of the upper left corner of the rectangle, while the bottom X and Y position point controls determine the location of the lower right corner.

*Scale* allows you to scale the rectangle-shaped region.

*Stretch* distorts the rectangle-shaped region by stretching it either horizontally (for positive values) or vertically (for negative values).

Increasing *Region Blend* softens the edges of the region.
Inside Oval and Outside Oval

*Inside Oval* and *Outside Oval* filter the image inside or outside a oval-shaped region, respectively.

The top X and Y position point controls determine the location of the upper left corner of a rectangle in which the oval is inscribed, while the bottom X and Y position point controls determine the location of the lower right corner.

**Scale** allows you to scale the oval-shaped region.

**Stretch** distorts the oval-shaped region by stretching it either horizontally (for positive values) or vertically (for negative values).

Increasing **Region Blend** softens the edges of the region.

**Reverse Range** functions similarly to an invert matte command, except that Reverse Range does not invert pixels affected by the Region Blend control. Region Blend always subtracts pixels from the matte. If Region Blend is 0, Reverse Range simply inverts the matte. If Region Blend is greater than zero, the matte is inverted, then the Blended pixels are partially transparent. Reverse Range does not apply to certain Region Types.
Distance to Point

*Distance to Point* filters the image between two specified distances from a center point. You can use Distance to Point to create a circular or donut-shaped region.

The top X and Y position point controls determine the location of the center point of the inner circle. The bottom X and Y position point controls have no effect when Distance to Point is selected.

*From* determines the radius of the circle which defines the inner edge of the region. Set *From* to 0 to produce a circular region, or increase this value to create a donut shape. Negative *From* values produce the same effect as a value of 0 unless you are using Region Blend.

If the *From* value is greater that the *To* value, no pixels are chosen.

*To* controls the radius of a circle which forms the outer edge of the region. Increasing *To* can extend the radius beyond the edges of the screen, in which case the region encompasses all pixels outside the inner circle.

Increasing *Region Blend* softens the edges of the region.
Region Blend softens the edges of the matte by removing pixels from both the inside and the outside edges of the region defined by From and To. Therefore, even when From is 0, increasing Region Blend removes some pixels from the center of the region, creating a transparent or semi-transparent hole. If you want a solid circular region, decrease the From value until you achieve the desired effect.

**Scale** adjusts the size of the filtered region. This value is expressed as a percentage of the region’s original size.

**Stretch** distorts the region by stretching it either horizontally (for positive values) or vertically (for negative values).

![Stretch=20](image1.png)  ![Stretch=−20](image2.png)

**Reverse Range** functions similarly to an invert matte command, except that Reverse Range does not invert pixels affected by the Region Blend control. Region Blend always subtracts pixels from the matte. If Region Blend is 0, Reverse Range simply inverts the matte. If Region Blend is greater than zero, the matte is inverted, then the Region Blended pixels are made partially transparent.

**Distance to Edge**

**Distance to Edge** filters the image within two specified distances from the edge of the frame. You can use Distance to Edge to produce a rectangular region with or without a rectangular hole in the center.

**From** determines the distance between the outer edge of the region and the edge of the image. Set From to 0 to include all of the pixels on the edge of the screen, or increase this value to move the edges of the region towards the center of the image.
To determines the distance between the inner edge of the region and the edge of the image. Increase To to include more pixels from the center of the image. If the From value is greater than the To value, no pixels are chosen.

Increasing **Region Blend** softens the edges of the region. Region Blend softens the edges of the matte by removing pixels from both the inside and the outside edges of the region defined by From and To. Therefore, even when From is 0, increasing Region Blend removes some pixels from the outer edges of the region, creating a transparent or semi-transparent border. If you want the region to extended to the edges of the image, decrease the From value until you achieve the desired effect.

**Reverse Range** functions similarly to an invert matte command, except that Reverse Range does not invert pixels affected by the Region Blend control. Region Blend always subtracts pixels from the matte. If Region Blend is 0, Reverse Range simply inverts the matte. If Region Blend is greater than zero, the matte is inverted, then the Blended pixels are made partially transparent.
Clock Wipe

*Clock Wipe* filters the image in a region between two radial lines emanating from a center point. By animating the angles of these lines, you can create a clock wipe.

![Clock Wipe transition](image)

- **Center** sets the coordinates of the center point.
- **From** and **To** control the angles between the edges of the region and the horizontal axis.

The default settings are set up to create a basic clock wipe that starts at 3:00 and moves clockwise similar to the wipe in the examples above. To achieve this effect, just animate the To setting from 0° to 360.

Increasing **Region Blend** softens the edges of the region.

**Reverse Range** functions similarly to an invert matte command, except that Reverse Range does not invert pixels affected by the Region Blend control. Region Blend always subtracts pixels from the matte. If Region Blend is 0, Reverse Range simply inverts the matte. If Region Blend is greater than zero, the matte is inverted, then the Blended pixels are made partially transparent.

Creating Wipes with the PixelChooser

You can easily create wipes from one image to another using the PixelChooser’s region controls and the Make Alpha Key filter.

1. Create two tracks in the timeline and place the starting image on the top track and the transition media (the ending image) on the bottom track.
2. Apply the BCC Make Alpha Key filter to the top track. Set the **Alpha From Channel menu** to **Full On**.
3. You can now animate the PixelChooser’s region controls to create a wipe between the source image and the transition image. To create a soft-edged wipe, adjust the Blend controls.
The wipe in this example was created using the Distance to Point region type, setting the center point in the top left corner, and animating the To value until the flower fills the screen.

**PixelChooser wipe**

![Time 00:00:00:15](image1) ![Time 00:00:01:00](image2) ![Time 00:00:01:15](image3)

**Linear Gradient**

*Linear Gradient* creates a linear gradient between the filtered and unfiltered regions in the image. When Linear Gradient is selected, only the point controls and the Reverse Range checkbox in the region group are active.

The top X and Y position point controls set the location of the transparent edge of the gradient along the X and Y axis, respectively.

![X=0, Y=0](image4) ![X= -450, Y= -450](image5)

The bottom X and Y position point controls set the location of the opaque edge of the gradient along the X and Y axis, respectively.
Reverse Range inverts the matte created by the filter.

Distance to Line

Distance to Line filters pixels based on their distance from a line between the two points. The line extends between two points whose locations are determined by the top and bottom X and Y position point controls.

From sets the distance between the line and the inner edge(s) of the filtered region(s). Set From to 0 to produce a single linear region centered on the line, create a linear region on either side of the line or increase this value to create two parallel filtered regions, one on either side of the line. Negative From values produce the same effect as a value of 0 unless you are using Region Blend.

To sets the distance between the line and the outer edges of the filtered regions. Increasing To can extend the outer edges of the filtered regions beyond the edges of the screen.
If the From value is greater than the To value, no pixels are chosen.

**Scale** adjusts the size of the filtered region. This value is expressed as a percentage of the region’s original size.

Increasing **Region Blend** softens the edges of the region. Region Blend softens the edges of the matte by removing pixels from both the inside and the outside edges of the region(s) defined by From and To. Therefore, even when From is 0, increasing Region Blend removes some pixels from the inner edges of the region(s), creating a transparent or semi-transparent area around the line. If you want the region to be solid in the center, decrease the From value until you achieve the desired effect.

**Reverse Range** functions similarly to an invert matte command, except that Reverse Range does not invert pixels affected by the Region Blend control. Region Blend always subtracts pixels from the matte. If Region Blend is 0, Reverse Range simply inverts the matte. If Region Blend is greater than zero, the matte is inverted, then the Blended pixels are made partially transparent.

**Distance to Light**

**Distance to Light** is available in some filters that use simulated light sources to affect the image. This option is similar to Distance to Point, except it uses the Light Source point instead of a center point control to define the center of the filtered region.

The top X and Y position point controls determine the location of the center point of the inner circle. The bottom X and Y position point controls have no effect when Distance to Light is selected.

The Distance to Light parameters work in the same way as the corresponding Distance to Point controls. For more information, see “Distance to Point” on page 28.
Working with the PixelChooser Matte Parameters

The Matte parameters allow you to filter an image based on the values in one or more of its channels. These parameters also provide three different methods of creating a matte from these channels.

The **Matte Channel menu** determines which channel is used to create a matte.

- **None** filters all pixels in the image, regardless of their channel values.
- **Luma** selects pixels according to their Luminance values.
- **Red, Green, and Blue** select pixels according to their corresponding RGB color channel values.
- **Alpha** selects pixels according to their Alpha channel values.
- **Hue, Saturation, and Lightness** select pixels according to their corresponding HSL color channel values.
- **RGB Diff, HSL Diff, Hue Diff, and Chroma Diff** choose pixels based on the difference between their channel values and the channels values of the chosen Color. RGB Diff uses RGB values in calculating differences, HSL Diff uses HSL values, Hue Diff uses only the Hue values (in HSL color space), and Chroma Diff uses Hue and Saturation values (in HSL colorspace).

The **Matte Layer menu** allows you to select any layer in the timeline to create the matte between unfiltered and filtered pixels.

The **Matte Type menu** determines which type of adjustments can be made to improve the matte. Each type has a different set of controls which are described in the following sections.

**Blur Matte** applies a basic blur to the matte created by the PixelChooser. This can help smooth edges in the matte.

**Choke Matte** applies a choke to the matte created by the PixelChooser. Positive Choke Matte values tighten the matte around the opaque regions, while negative values pull the matte away from the edges of the opaque regions.

**Invert Matte** reverses the range of the matte.

**Levels**

The **Levels** Matte Type allows you to adjust the contrast in the matte by adjusting the input black and white levels.
**Black Level** controls the number of pixels in the matte that are pure black. Increasing Black Level pushes dark gray pixels to black.

![Black Level=0](image1.png) ![Black Level=100](image2.png)

**White Level** controls the number of pixels in the matte that are pure white. Decreasing White Level pushes light gray pixels to white.

![White Level=255](image3.png) ![White Level=200](image4.png)
Threshold

The Threshold Matte Type allows you to adjust the balance of black and white pixels in the matte. You can then smooth the resulting matte by adding intermediate gray pixels.

Threshold sets a level in the chosen color channel. Pixels whose channel values are above the Threshold level are pure white in the matte, and those with channel values below the level are pure black. For example, if Matte Channel is set to Red and Threshold is set to 100, then all pixels whose red channel value is higher than 100 are white in the matte. All pixels whose red channel value is lower than 100 become black in the matte.

Matte Softness softens the edges of the matte by creating gray areas for pixels whose values are near the Threshold value. Set Matte Softness to 0 for a harsh, high-contrast matte with no gray pixels, or increase it to soften the edges of the filtered region.
Range

The Range Matte Type allows you to choose a range of channel values within which pixels are filtered. You can then soften the edges of the resulting matte.

From and To define the lower and upper limits of a range of values in the chosen color channel. Pixels whose appropriate color channel values fall within this range appear white in the matte, while the remaining pixels are left black.

From=0, To=140
From=140, To=255

If From is higher than To, no pixels are filtered. Decreasing From below 0 and/or increasing To above 255 only has an effect if you are using Region Blend.

Increasing Matte Softness softens the edges in the matte.

Matte Softness softens the edges of the matte by removing pixels from all of the edges of the matte defined by From and To. Therefore, even if From is 0 and To is 255, increasing Matte Softness removes some pixels from the matte, creating transparent or semi-transparent areas. You can use negative From values and/or To values higher than 255 to expand the matte to counteract this effect if necessary.