



Pandora Pixi and MegaDef

The Pixi and MegaDef adds Primary and Secondary Colour Processing and Effects processing, it fits into the telecine chain in the following order.

The Pixi is a downstream system, normally working on SDTV or HDTV signals.

MegaDef can be either upstream or downstream, working with SDTV or HDTV or Data.

Both systems work in real-time and have the same functions

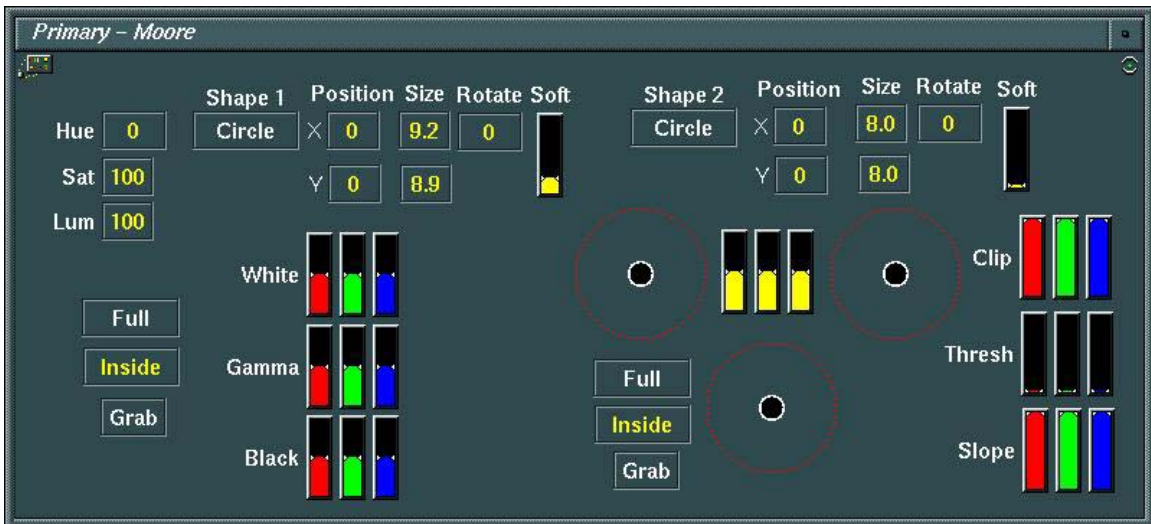
- Moore Mega1
 - Primary Colour Corrector
 - Master Hue, Saturation & Luminance
 - Primary Colour Corrector 1
 - Primary Colour Corrector 2
 - Defined Shapes/ Areas
 - Soft Clip – Clip/ Threshold/ Slope
 - Secondary Colour Corrector
 - Moore Mega1 Twelve Vector Secondary
 - Moore Mega1 Desaturation and Master Hue, Sat and Lum
 - Defined Shapes/ Areas
 - Moore Mega1 Copy and Read
 - How to make a monochrome picture and bring back colours
 - Vignette Option
- Mega2 layers
 - Primary
 - Channel isolation
 - Channel priority
 - Channel editing
 - MegaShapes
- MegaGamma layer

Moore Mega1 – Primary Colour Correction

Moore Mega 1 PCC consists of a Master Hue, Saturation & Luminance Control, and a Dual Primary Colour Corrector (PCC). By pressing **1** on the MegaDef panel, as shown below the Primary and Secondary Moore Mega 1 GUI panels will pop up (if configured to do so), the Blue Soft panel will also display **Full**, indicating that it is working over the entire picture and not limited to a definable area.



Mega 1

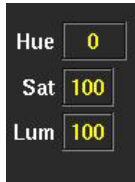


As can be seen above, the first set of controls is Master Hue, Saturation & Luminance before either of the PCC's, this enables functions such as sepia to be easily carried out.



Moore Mega 1 – Platinum v420

Master Hue, Saturation & Luminance



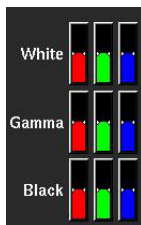
Hue – has a default of 0 with a range of +/- 180 degrees, but it will wrap around if you take the control over the +/- 180 range.

Saturation – has a default of 100 with a range of 0 – 400, where 0 will completely desaturate the picture and 400 will completely saturate the picture, but will leave the Black & White levels alone.

Luminance – has a default of 100 with a range of 0 – 400. Where 0 will make the picture almost completely Black and 400 will make the picture almost completely white.

These controls can be made active on the (Transport) Blue Soft panel, via clicking on the GUI interface.

PCC 1



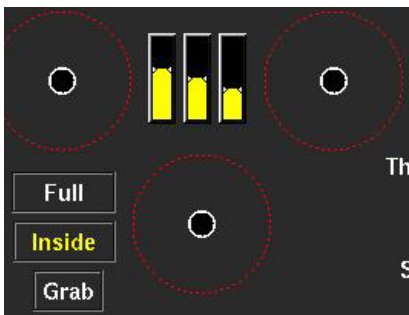
The first Primary Colour Corrector is an individually RGB controlled PCC, controlled by the (Transport) Blue Soft panel, again by clicking on the respective boxes on the GUI to make the controls active in the (Transport) Soft Panel. If needed the controls can be ganged together, by pressing and holding down the Macro key above the Stop key (on the Transport panel) all 3 of the Upper, or lower, Knobs will be ganged together – to adjust you must move the right hand (Blue) control.

You would normally do an initial balance using these controls, very similar to balancing a Telecine to get a reasonable picture. As can be seen above there are controls for RGB White level, Gamma & Black level adjustment.



Furthermore these controls can be made active over the entire picture, as is the case shown here, or can be made active either Inside or Outside of two possible shapes. The controls to the left set this, with the upper one cycling through **Full > Shape 1 > Shape 2**, and the middle toggling between **Inside/ Outside**, but only having an effect when a shape is selected. The lowest control will **grab** the set shape controls to the (Transport) Soft panel and also to the trackerball on the MegaDef panel. Alternatively you can select the **Full** setting on the Blue (Transport) Soft panel, this will then activate the definable area controls on the Blue (Transport) Soft Panel.

PCC 2



The second PCC is a 'classic' differential RGB control using the trackerballs, this would normally be used for Scene to Scene correction once the picture has been initially balanced using PCC1.

This would be used as normal with the Outer ring being the Master control shown through the three yellow 'pillars' in the centre of the PCC 2 GUI. The trackerball being the colour differential adjustment and as normal are shown with the positioning of the Black dot in the circle.

Again the PCC 2 can be set to work over the whole picture or be defined to a certain area, this is set through the selection of the **Full > Shape 1 > Shape 2** setting to the left of the controls.

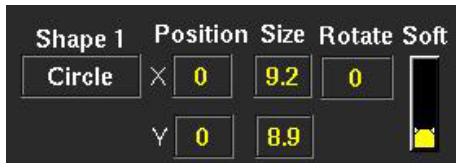
The middle control toggles between making the PCC 2 work either **Inside or Outside** of the selected Shape, this will obviously only have an effect if a Shape is actually selected. The lowest control will **grab** the active Shape (as set above) controls to the (Transport) Blue Soft Panel and the MegaDef panel allowing the active shape to be easily resized and correctly positioned.

Defined Shapes

Both the PCC 1 & PCC 2 has the ability to work over the entire picture or be limited to a defined area. There are two possible shapes, each being capable of either being a Diamond or Circle this is selected by toggling the selection in the relevant shape.

Each shape has an **X & Y size; X & Y position**, these can be set through making the controls active on the (Transport) Blue Soft Panel &/or utilising the trackerball on the MegaDef panel. The Rotate and Softness controls need to be set via the (Transport) Blue Soft Panel.

To make the controls active on the (Transport) Blue Soft Panel either click on the **‘Grab’** button next to the respective PCC, or select the **Full** button on the (Transport) Blue Soft panel or alternatively click on the controls via the GUI interface.



X Position – More easily controlled via the MegaDef panel trackerball where you can move the trackerball till the Shape is in the desired horizontal (and vertical) position, however it can also be set via the (Transport) Blue Soft panel where it has a range of +/- 50 with 0 being the centre.

Y Position – As above but obviously looking at the vertical position.

X Size – Controlled from the MegaDef trackerball outer ring where it will have a global change with the Y Size as well. Or it can also be set via the (Transport) Blue Soft panel where it has a range of 1.0 – 10, 1.0 being the smallest and 10 the maximum and will change the horizontal size of the shape.

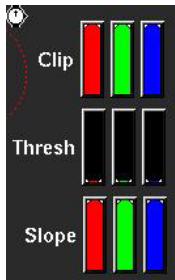
Y Size – As above but obviously this will affect the shape vertically instead.

Rotate – Rotates the selected shape through +/- 180 continuously.

Softness – Increasing the Softness control will actually decrease the amount of softness applied to the shape, used to create a seamless transition in the picture.

Clip/ Threshold/ Slope

This provides a Soft White Clip function.



These three controls are activated by clicking on the bars via the GUI to activate the controls on the (Transport) Blue Soft panel. We then have a Red, Green & Blue Clip level; Red, Green & Blue Threshold level; Red, Green & Blue Slope level. Again these controls can be ganged together by pressing & holding the macro button above the Stop key (on the Transport panel) all 3 of the Upper, or lower, knobs will be ganged together – to adjust you must move the right hand (Blue) control.

R,G & B Clip – Defaults at a maximum, lowering this will reduce the White clip level, if adjusted independently this will have the effect of burning out the detail in the Highlights or Whites.

R,G & B Threshold – Defaults at 0, increasing this will raise the break point that the soft clip level will start from.

R,G & B Slope – Defaults at a maximum, reducing this will raise the slope, the slope is the least used function of the three and will raise a clip level back up from the point set by the Threshold.

Use of the Clip & Threshold

As stated these functions provide the ability to set a soft white clip so that instead of running into the headroom it can effectively be scaled. This is normally achieved by raising the Threshold slightly and then lowering the Clip level so that it achieves the desired result.

However, the Moore Mega 1 has far more range than its predecessor and so it is possible that this function might never be needed.

Moore Mega 1 - Secondary Colour Correction

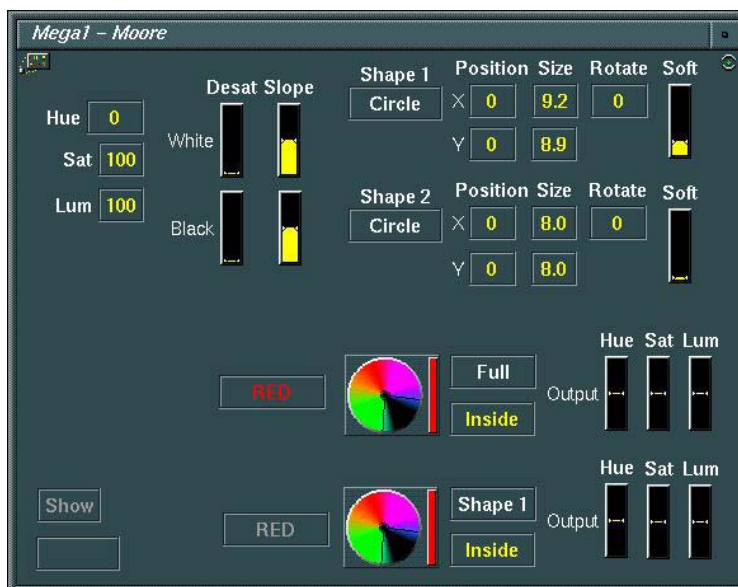


The Moore Mega 1 Twelve Vector Secondary Colour Corrector is a powerful 3rd generation SCC for the Pandora Pixi and MegaDef Colour Processors. It allows the colourist to make changes to the Hue, Saturation and Luminance of the picture based on the colour values of the original image, and overall (Master) changes to the Hue, Saturation and Luminance. There are also functions that allow the colourist to desaturate both the highlights and lowlights in order to avoid tinted blacks and whites.

All these changes are applied to the entire picture after the Moore Mega1 two Primary Lifts, Gammas and Gains. After the Secondary's the picture is processed by Moore Mega 1 Vignette (although this is an option), Mega2 (again optional for either a 3 or 6 Channel system) and finally MegaGamma.

The main functional controls of Moore Mega 1 are accessed by pressing the **1** button on the MegaDef panel, this will cause the Primary and basic Secondary panel to pop up. Shown below is the default pop up Moore Mega 1 Secondary Window.

- [Moore Mega1 Twelve Vector Secondary](#)
- [Moore Mega1 Desaturation and Master Hue, Sat and Lum](#)
- [Moore Mega1 Copy and Read](#)
- [How to make a monochrome picture and bring back colours](#)



Moore Mega1 Twelve Vector Secondary

There are other GUI panels that can be utilised although other than the one shown on the previous page, however they have to be deliberately enabled from the Vault. However the other main panel is the Moore Mega1 Full, this can be selected by either double tapping on the '1' button or by double clicking on the Mega 1 selection of the Mega Virtual panel. Then instead of the PCC and the 'Normal' SCC window the PCC and the Full SCC window will be displayed when selecting Mega1.

Full Moore Mega 1 window



Twelve variable vectors exist for the Moore Mega1 Secondaries, these are selected using the R, G, B, Y, C and M keys for the other six vectors the same keys are used in conjunction with the shift key. By default they correspond to Red, Green, Blue, Yellow, Cyan and Magenta.

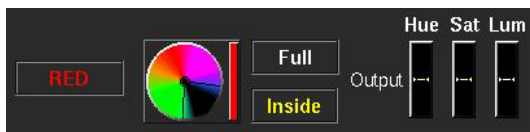
The hue, saturation and luminance within the selected vector can be adjusted using the three controls on the upper left hand side of the MegaDef Control panel. The Input vector position can be rotated through 360 degrees using the top control on the right of the control panel. The Input vector width can be altered using the second control on the right of the control panel. The three knobs on the left hand side of the panel are the Hue, Saturation and Luminance Vector Output controls (and their resets). Using these controls it is possible to alter the appearance of a colour depending on which of the Channel Selection buttons is illuminated. For example, if the R (Red)

Moore Mega 1 – Platinum v420

channel is selected, it is possible to alter, say, the saturation of red in order to match two scenes together.

But exactly what is Red? Imagine a set of colour bars on a vectorscope. The red bar is a single point on the scope screen because all the colour red is exactly the same red - it is, after all, a test signal! In the real world of colour grading however, there millions of reds, greens or blues etc.

When you select a channel in Moore Mega1, the system defaults to a wedge of 60 degrees width, centred on red that does not quite reach the centre of the vectorscope. For most situations this will be quite OK. You will be able to change all the reds in the picture. Sometimes, though, you need to be a bit more specific about what you want to change. Moore Mega1 has the ability to refine the vector width, position and the lower limit of saturation for what is seen as Red By using the Hue Input Selector controls on the MegaDef panel you can alter the position and width of the wedge.



When you are trying to narrow a selected colour vector it could be useful to enable the Show function, this will highlight all the colours that are being detected by the Vector settings.

Although we have been talking about the Red channel of Moore Mega1, it is possible to alter the position of the red wedge to point at any colour that you want. Similarly it is possible to alter the width of the wedge so that, at its thinnest setting there are only a very precise set of hues in the wedge, up to having every possible hue.

By default, the lower saturation isolation is set to be just away from the centre of our imaginary vectorscope. This is so that black and white are not affected by the output controls. It is possible, however, to alter the lower level of saturation isolation using the controls on the Moore Mega 1 SCC panel in the Platinum display. Turning a control anticlockwise will decrease the lower limit of saturation isolation - less and less saturated colours will be affected by the output controls, and turning a control clockwise will do the opposite - only more and more saturated colours will be affected.

When you want to alter the position, width and sat isolation, it is sometimes useful to turn the Luminance control up. Now the colours that are being affected will be highlighted, making it easier to see what is and is not being affected.

So, a single channel of Moore Mega1 can be used to change a very small and exact range of colours right up to doing the same thing as master hue, saturation and luminance - and there are twelve of them!

Moore Mega1 Black & White Desaturation

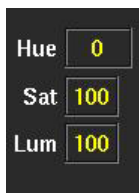


White desaturation is available on the third control on the right of the panel. Black desaturation is available on the fourth control on the right of the panel. Black and White slope are also available. Alternatively again by clicking on these controls in the GUI the controls will be sent to the (Transport) Blue Soft panel.

We all know the problem of having parts of the picture, especially the lowlights, having a colour cast. This can be time-consuming to correct using primary lift without messing up the mid-tones. The Desat(urate) controls on Moore Mega 1 are a set of tools to help to correct this situation. As you turn the Desat Black control clockwise, the colour will be taken out of the lowlights of the picture. The further you turn the control, the further up the luminance scale this desaturation goes. Naturally, this is not a hard on/off effect – the desaturation ‘ramps’ into effect. You can see what is happening by looking at a greyscale ramp with a large colour cast to it. As you turn the Desat Black knob you will see how the desat attacks the colour cast. You also have control of the ‘rate’ of this attack. The control called ‘Slope’ in the Moore Mega 1 SCC panel in Platinum will allow you to change the attack from a hard on/off effect to a very gradual desaturation as the brightness decreases. Desat White works in the same way except it comes in from the top of the luminance range (White) and works down the brightness scale. These controls have enough range to take the whole picture to monochrome

Moore Mega1 Master Hue/ Master Saturation / Master Luminance

- Master hue is available on the fifth control on the right of the panel.
This will change the hue or phase of the picture.
- Master saturation is available on the sixth control on the right of the panel.
This will alter the saturation of the whole picture from monochrome to highly saturated
- Master luminance is available on the seventh control on the right of the panel.
This will make the whole picture brighter or darker

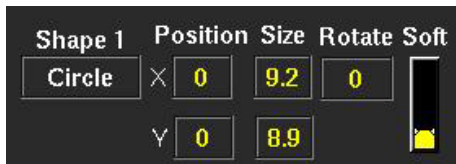


Defined Shapes

The 12 Vectors of the SCC have the ability to work over the entire picture or be limited to a defined area. There are two possible areas, each being capable of either being a Diamond or Circle this is selected by toggling the selection in the relevant shape.

Each shape has an **X & Y size; X & Y position**, these can be set through making the controls active on the (Transport) Blue Soft Panel &/or utilising the trackerball on the MegaDef panel. The Rotate and Softness controls need to be set via the (Transport) Blue Soft Panel.

To make the controls active on the (Transport) Blue Soft Panel either click on the **'Grab'** button next to the respective PCC, or select the **Full** button on the (Transport) Blue Soft panel or alternatively click on the controls via the GUI interface.



X Position – More easily controlled via the MegaDef panel trackerball where you can move the trackerball till the Shape is in the desired horizontal (and vertical) position, however it can also be set via the (Transport) Blue Soft panel where it has a range of +/- 50 with 0 being the centre.

Y Position – As above but obviously looking at the vertical position.

X Size – Controlled from the MegaDef trackerball outer ring where it will have a global change with the Y Size as well. Can also be set via the (Transport) Blue Soft panel where it has a range of 1.0 – 10, 1.0 being the smallest and 10 maximum and will change the horizontal size of the shape.

Y Size – As above but obviously this will affect the shape vertically instead.

Rotate – Rotates the selected shape through +/- 180 continuously.

Softness – Increasing the Softness control will actually decrease the amount of softness applied to the shape, used to create a seamless transition in the picture.

Moore Mega1 Copy and Read

Copying all Moore Mega1 channels from another event.

- Hit **UP** or **DOWN** to select the event that has the desired correction.
- Press the illuminated key labelled **SECONDARY**.
- Press the **1** key on the MegaDef panel.
- Now all twelve Moore Mega1 channels will be merged with the current event.
- Press **ENTER** to update this into the list.

Reading all Moore Mega1 channels from a note.

- Read the note that has the desired correction.
- Press the illuminated key labelled **SECONDARY**.
- Press the **1** key on the MegaDef panel.
- Now all twelve Moore Mega1 channels will be merged with the current event.
- Press **ENTER** to update this into the list.

How to make a monochrome picture and bring back colours

All Moore Mega1 channels have the same priority.

Take any Moore Mega1 channel and increase its input hue width to 360 degrees.

Then turn down its output saturation.

The whole picture will go monochrome.

Now you can bring up any colours using the other Moore Mega1 channels

Select the channel and increase its saturation.

This leaves Mega2 fully available for other effects.

Vignette

This is an option with the Moore Mega 1 and therefore will not necessarily be present on your system. The Vignette option provides a further three definable areas for Primary Colour Correction, Saturation & Luminance, these three areas are referred to as R, G & B. The background layer that is also present for Primary Colour Correction, Saturation & Luminance is referred to as Y but is not definable.

To select the Vignette option, either select **V** on the MegaDef panel or manually select the Vignette panel, depending on the configuration selecting **V** will cause this Vignette panel to pop up.

To select which one of the three definable areas select the R, G or B keys on the MegaDef panel, the area can then be set by the active controls on the Blue (Transport) Soft panel and using the MegaDef panel trackerball.



Selecting Vignette, 3rd button from left, next to Mega 2.



As a default the **X & Y Size** (denoted as Aspect), **Rotate**, **Softness & Inside/ Outside** selections will be defaulted as the controls initially displayed on the Blue (Transport) Soft panel.

To make any of the other controls active on the Blue (Transport) Soft panel simply click on that control via the GUI, i.e. **X /Y Position, Sat & Lum**, however the X & Y position is probably most easily controlled via the MegaDef panel trackerball.

The Red, Green & Blue graph is a representation of the PCC settings. The **Sat & Lum** settings can be controlled either by clicking on the GUI to transfer the respective control to the Blue (Transport) Soft panel or simply using the controls on the left hand side of MegaDef panel. **Sat** being the middle knob, **Lum** being the bottom knob.

X Position – More easily controlled via the MegaDef panel trackerball where you can move the trackerball till the Shape is in the desired horizontal (and vertical) position, however it can also be set via the (Transport) Blue Soft panel where it has a range of +/- 50 with 0 being the centre.

Y Position – As above but obviously looking at the vertical position.

X Size – Controlled from the MegaDef trackerball outer ring where it will have a global change with the Y Size as well. Can also be set via the (Transport) Blue Soft panel where it has a range of 1.0 – 10, 1.0 being the smallest and 10 maximum and will change the horizontal size of the shape.

Y Size – As above but obviously this will affect the shape vertically instead.

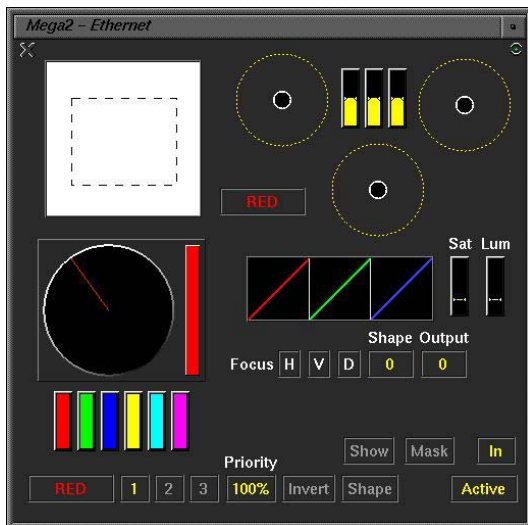
Rotate – Rotates the selected shape through +/- 180 continuously.

Softness – Increasing the Softness control will actually decrease the amount of softness applied to the shape, used to create a seamless transition in the picture.

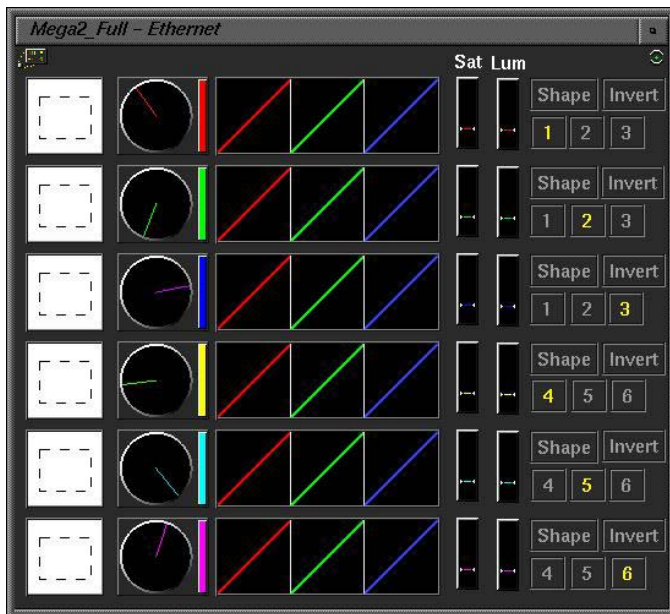
Mega2

The main functional controls of Mega2 are accessed by pressing the **2** button on the MegaDef panel, as with the Moore Mega 1 a double tap of the **2** button or double clicking the Mega 2 in the Mega Virtual panel will open the Full panel.

- Primary
- Channel isolation
- Channel priority
- Channel editing
- MegaShapes



Pop up panel



Full Mega 2 panel

Colour and area isolation Processor for Primary & Secondary

Three or six variable channels exist for the Mega2 layer, these are selected using the R, G, B, Y, C, M keys. The saturation and luminance within the selected vector can be adjusted using the two controls on the upper left hand side of the MegaDef panel. Primary control is available when the balls are orange. As an aid, the **MASK** button on the MegaDef will desaturate all parts of picture that are not within the current isolation. Additionally in mask if a region has been set, then its boundaries will be visible. **SHOW** mode will highlight the current channel in its colour.

Mega2 Primary control



Mega2 primary controls are available when all the balls are orange. If any balls are green, then press and hold the switch above the lower ball until they change. If the balls are now red then press the **2** key on the MegaDef panel. Now the balls will be orange. Lift gamma and gain controls are now available. These controls will affect isolated picture areas. Press and hold on one of the primary reset buttons to default the primary for that channel. The isolation depends on colour and area selection. This will be described later.

Resetting the changes made inside a channel.

Press and hold on one of the primary buttons, to default the primary, and press and hold the appropriate channel selection button to default the secondary sat and lum. The vector position, or hue, can be rotated through 360 degrees using the top control on the right of the MegaDef panel. The vector width can be altered from 0 to 360 degrees using the second control on the right of the MegaDef panel. The threshold of lowest saturation that is included in the isolation is set using the third control on the right of the MegaDef panel. The threshold of highest saturation that is included in the isolation, is set using the fourth control on the right of the MegaDef panel. The threshold of lowest luminance that is included in the isolation, is set using the fifth control on the right of the MegaDef panel. The threshold of highest luminance that is included in the isolation is set using the sixth control on the right of the MegaDef panel.

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Channel isolation

By default, when a channel is opened, the isolation is set to a 60 degrees vector width, centred about the **R, G, B, Y, C, M** key that was chosen. The lower saturation threshold is set slightly above zero to exclude black and white areas from the isolation. The full luminance range is included in the isolation. By default, the thresholds of hue, saturation and luminance isolation are softened slightly. The softness of all these thresholds can be independently adjusted. However there is only one physical control for softness. Whenever one of the above threshold controls is adjusted, the softness of this threshold is automatically assigned to the seventh control on the MegaDef panel.

To make a channel work on all colours, simply press the **EXPAND** key. This is the key below **GRAB** on the MegaDef control panel.

By default, the isolation occurs over the full picture area. However, the isolation can be limited to particular areas of the picture by using the region controls available for each channel. A double press of the button next to the ball on the MegaDef panel, will set the area to a small rectangle. Use of **MASK** or **SHOW** mode will ease adjustment of this region.

The region position can be adjusted using the track ball on the MegaDef control panel. The small button next to this track ball toggles control of the region between size and position. Press and hold this button to reset the region to be full screen. Then all parts of the picture will be in the isolation. Double press this button to set a default region. (A tall rectangle)

[.....More.....](#)

Mega2 channel priorities

The priority of Mega2 channels is affected by the top left knob on the left hand side of the MegaDef panel. Turning the knob down will mix the channel into the background and thus behind another channel.

With a six channel system there are two layers, the lower three channels Y,C,M affect the picture first. Then the R,G,B channels appear.

Copying all Mega2 channels from another event.

- Hit **UP** or **DOWN** to select the event that has the desired correction.
- Press the illuminated key labeled **SECONDARY**.
- Press the **2** key on the MegaDef panel.
- Now all **Mega2** channels will be merged with the current event.
- Press **ENTER** to update this into the list.

Reading all Mega2 channels from a note.

- Read the note that has the desired correction.
- Press the illuminated key labeled **SECONDARY**.
- Press the **2** key on the MegaDef panel.
- Now all Mega2 channels will be merged with the current event.
- Press **ENTER** to update this into the list.

Copying a Mega2 channel from another event.

- Hit Up or Down to select the event that has the desired correction.
- Press the illuminated key labeled **SECONDARY**.
- Press the **2** key on the MegaDef panel.
- Press the key **R,G,B,Y,C,M** for the required channel
- Now the required Mega2 channel will be merged with the current event.
- Press **ENTER** to update this into the list.

Reading a Mega2 channel from a note.

- Read the note that has the desired correction.
- Press the illuminated key labelled **SECONDARY**.
- Press the **2** key on the MegaDef panel.
- Press the key **R,G,B,Y,C,M** for the required channel
- Now the required Mega2 channel will be merged with the current event.
- Press **ENTER** to update this into the list.

[.....More.....](#)

Swapping a Mega2 channel.

(Useful to alter channel priorities)

- Make sure the list is in Program or Live.
- Drag the luminance bar for the appropriate source channel in the Mega2 panel and drop it on the luminance bar for the destination channel. The first channel will be swapped with the second channel.

Copying a Mega2 channel.

(Useful to start another channel with similar setup)

- Make sure the list is in Program or Live.
- Hold down the shift key on the QWERTY keypad.
- Drag the luminance bar for the appropriate channel in the Mega2 window and drop it on the luminance bar for the destination channel. The first channel will be copied over the second channel.

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MegaShapes

To get started with Megashapes:-

To create a shape there are three ways this can be achieved, these are either a basic ellipse utilizing the 'circle' tool, or to draw a shape utilizing the 'pencil' tool or finally use the 'Magic' tool to select areas of the same colour directly from the picture.

Using the circle tool (Although the circle tool would probably be used more to create a Vignette, see next section)

1. Go to the viewer, select double layer to overlay the shape onto the picture or single layer to create the Vignette.
2. Select the circle tool, by left clicking (if kept depressed a pop up window to select size and aspect will appear), alternatively just click and drag with the mouse. If required the circle can be re-positioned by moving it with the trackerball on the Mega panel.

Using the freehand tool

1. Go to the viewer, select double layer if not already selected.
2. Select the freehand tool mode, if held down when selecting it the brush size can be changed to the required size.
3. Draw the required shape, normally an outline of an item in the viewer picture.
4. When happy select the fill tool and click inside the previously drawn shape to fill the area.

Using Magic brush tool

1. Go to viewer, if not already selected enable double layer, thereby seeing the picture that you want to 'trace' the required shape from.
2. Select the Magic tool, by holding down a pop up window will appear that enables you to select the required threshold level.
3. Click on the required area of the picture, the magic tool will then trace and fill the area, the larger the threshold the greater the area copied.

For further information please consult the MegaShapes document (MegaShapes.pdf)

