FOUR

MEGA2
Evolution Panels Version
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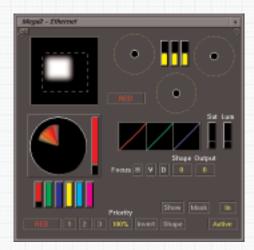
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CHAPTER 4:
MEGA 2

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If "M2" on the SCC panel is pressed, the roller-balls will turn orange, and the Mega 2 window will open on the vdu **Fig. 36**; the orange display (SCC) will change to show which control knob is which. The normal vdu window shows the display for the selected colour channel; to see all the channels at once, double press the "M2" button. Press the button again to return to the single channel window. In the 3-channel version of Mega 2, the Y,C and M white keys will have not have any effect (although they will illuminate if pressed).

Also, the full window will show 6 channels (this can be edited to show only 3: see the chapter on views). "Show" and "Expand" have the same function as Mega 1. The knobs labelled 'Focus' and 'Key' on the orange display will only work on systems with the Focus Card option, the use of which is described later.

Fig. 36

Mega 2 has full primary correction at the output, controlled by the roller-balls, on every channel, plus saturation and luminance, controlled by the black knobs above the roller-balls. Luminance shouldn't normally be needed, as the gain control gives a cleaner result; there is no hue control with Mega 2.

MEGA 2 COLOUR SELECTION.

To select a Mega 2 channel **Fig. 36**, press "M2" (if not already selected) followed by the white key for the required channel. As with Mega 1, each channel is initially set to work on the colours shown on its selector key, **but they can be used in any part of the colour range**.

Pressing "Show" will now make those parts of the image that will be affected by the output controls turn the colour of the channel they are selected by (i.e. red for red channel, green for green channel etc., rather than white, as is the case for Mega 1).

"Mask" will leave in colour any parts of the image that will be affected by the output controls, and turn the rest of the image monochrome. If just "Show" is selected, then all Mega 2 channels currently open will have their selections highlighted by their colours; if both "Show" and "Mask" are pressed, then the image will have just the highlight colour of the current channel on a monochrome picture. If "Show" is selected and no areas are highlighted, or "Mask" is selected and no areas are left in colour, then no part of the image is inside the current channels selection. With just 'Show' on, and more than one channel open, **some selected areas may not be clearly visible due to the colour overlaps**.

Mega 2 has full isolation by upper and lower levels for each parameter, plus a feathering control for each pair of parameters. To adjust the selection, the knobs at the top right of the SCC panel are used. The top two are the same as Mega 1; top left sets the vector centring and the middle knob, the vector spread. As with Mega 1, the centring knob has no endstop, but can be rotated through all possible colours. The two below set lower (left hand knob) and upper (right hand knob) saturation levels to be included in the selection; the third pair down are for lower and upper luminance levels. For the latter two pairs, once a lower and upper level has been set, adjusting the left-hand knob will then move the existing spread of values, and the other knob will increase that spread. **The default setting for all channels excludes the lowest saturation levels**.

Mega 2 selection is best set in order of the knobs, from the top down, i.e. first vector centering; then vector width (followed by readjusting the centering to check its position); exclude lower saturation; exclude upper saturation; exclude lower luminance; exclude upper luminance; each one should then be readjusted to fine tune the selection.

Each of these 3 pairs of selections can be feathered with the right knob of the row. On the vdu, it shows as a softness at the edge of the display for that selection. It works by checking for pixels that have a value near to that set by the selector controls; it will then, depending on its own setting, and how close in value the pixels are, apply some of the colour correction to them.

The original selection is best made with this control off for each parameter, to ensure accuracy, but **the factory default setting applies some feathering to each control**. If the selection shows a pixelated effect, adjust the feathering controls, repeating for each selection parameter to find which is causing the pixelation. The feathering can then be increased, and the selection range decreased, to find a better overall setting for both.

The "Expand" key will fully expand a channels selection, to include all vectors, luminance and saturation levels; if a selector control is reduced from this fully expanded state, it will have the default feathering value applied to it. "Expand" cannot be toggled on and off, and it won't re-expand the luminance selection if selected again after its first use on an event.

A double press of a channel selector key will close the channel, **but leave all the other parameters (input selection, region size ect, and all output levels) as they are**. This means that if further events are added to a list after the channel has been closed this way, opening it again will apply the other parameters set before it was closed. However, in an existing list this will not happen, as the channel will open from its default (this assumes the existing list was made without using that channel). The same will apply if a grading is copied from an event with a channel that is closed, but for which the selection parameters had been set before it was closed.

PRIORITIES:
Unlike Mega 1, Mega 2 channels have priority. Once an area or part of an image has been selected by a channel, those to its right cannot then select the same part of the picture. Thus the R channel has priority over the G, which in turn has priority over the B. (see later for a description of the priorities in 6 channel systems, which does not strictly follow this rule). So, if the R channel is opened and fully expanded, neither the G or B channels will be able to select any part of the picture. However, if the R channel selection is then reduced to select only the warm tones in the image, the G channel can then work on any other part of it. If the G channel itself is then reduced to alter only some colours in the image, the B channel can then select whatever is not already selected by R and G. If a channel has a region selected (see below), this applies only inside the region.

When using 'Mask' to select part of an image, it may then seem that the output controls are having no effect. In this case, it might be that a higher priority channel is already covering the selection made with 'Mask', which will display as normal for each channel, regardless of what selection has been made for any others. So, although the R channel may be fully expanded, which will prevent G or B being able to change any part of the image, in 'Mask' they can still apparently be used to select areas; but any changes made with them will not be visible.

A similar situation may arise with 'Show', when the colour overlaps caused by the 'Show' mode may mean the selected areas for some channels are not clear.

When Mega 2 is selected, the second knob from the left in the top row on the orange display (SCC) will be labelled 'Prty': this is the priority level control for the currently selected channel. Its level is shown on the display, and in a small box in the Mega 2 vdu window; the default is 100%.

At levels lower than this, the channel is faded into the channels behind it; higher levels will alter the behaviour of its region, if in use, by making the corners curved **where it overlaps a channel selection with lower priority**. Higher priority channels can fade into lower ones, but a lower priority channel **cannot have its priority increased over another with this control**.

To change overall channel priorities, use either the 'Swap' function, or the numbered grid to change channel control, both described later. Tapping on the 'Priority' vdu box will assign control to the orange sub-panel.

REGIONS:
Each Mega 2 channel has its own region generator; they are all independent of each other. Thus each channel can have a selection made first by colour, saturation and luminance values, and this can then be further refined with the regions. In Mega 2, the top row of knobs on the SCC panel will be labelled: Tilt, Prty, Focus and Key, and the bottom row, Left, Right, Top and Bottom. All the bottom row, and Tilt from the top row, are region shape controls.

To use a region on the current channel, double press the small black button above and to the left of the track-ball; the region will appear at its default position (it is usually easier to see regions with 'Mask' on). The trackball is then used for sizing and positioning the region. To do so, press the white button above and to the right of the track-ball (it will illuminate red). In this mode, movement of the ball will resize the region (from the top left-hand corner).

If the white button is pressed again, so it is no longer illuminated, movement of the ball repositions the region. Each edge of the region can be independently softened with the controls on the lower row of knobs on the orange display; softness is applied from the edge outwards, so it will increase the regions size .

Alternatively, the outer trackball ring will apply equal softness to all four sides of a region, or expand existing softness by the same amount. "Tilt" (the leftmost knob on the top row of knobs) will make the upright edges of the region move to an angle to the top and bottom, from their normal 90 degrees.

"Expand" does not effect the size of a region; if one exists already, or is made after "Expand" is pressed, the channel will then select everything inside it.

A fast double press of the small black button will reset the regions size and position to its default; or holding it down for about two second makes the region full screen (i.e. no region). Mega 2 regions are based on

rectangles; they cannot be rotated, and there is no circle (although one can be made as a MegaShape, described later in the manual). The angles at the corners will become less pronounced as the edge softness is increased; the corners can also be turned into arcs where channel selections overlap by increasing the channels priority to above 100% (this only works if softness is applied to the region).

In the Mega 2 window are two buttons labelled 'Shape'; these are unconnected with Regions.

MEGA 2 VDU WINDOW CONTROLS.

If the reset icon at the top right of a single Mega 2 window is tapped on, **all Mega 2 channels will be reset, not just the one displayed in the window**.

In the vdu window are access to other functions which don't have dedicated controls, and displays of the input selection and output levels. The large rectangle at the top left shows the current size, position and softness of the region, if in use; otherwise, the rectangle will be white, which means no region. The circle in the graphic below shows the current vector selection of the channel; its position is that of the vector selected, and the colour an approximation of the actual image colour (this cannot be particularly accurate due to differences in vdu colour calibration). The vector display will also show the upper and lower saturation levels, with any feathering shown as softness at the edges.

An area defined by a black outline shows the centre of any selection. The middle of the circle is the lowest saturation point; a gap between that and the vector displayed in the circle indicates that lower saturation levels are being excluded from the selection. A gap between the circles outer edge and the vector display shows that higher saturation levels are being excluded.

To the circles right, in the colour of the current channel, is a vertical bar representing the luminance selection (the default is full level). As the luminance selectors and feathering are altered, so does the size, position and softness of this bar.

The roller-ball graphics show the same information as those for the Mega 1 primaries; they can be tapped on to assign control to the orange sub-panel. There is an indicator of which colour channel is in use, and graphics to show the output levels of the roller-balls. Below them are the Focus option controls (see later in this chapter for a guide to their functions). The bar graphs for Sat and Lum can be tapped on to assign them to the orange sub-panel, so 4 Mega 2 channels can be assigned this way at any time.

COPY and SWAP
(this is **not the same** as 'Copy' mode).

Below the vector representation are 6 vertical coloured bars. These are used for swapping and copying channels. For either of these functions to work, **the Pogle must be in either 'Program' or 'Live'**. To swap channels, position the cursor over a channel and press and hold the pen down. Then drag the cursor over the other channel in the swap and release the pen; the channels are now swapped.

To copy channels, do as above, but hold down the small white button above the 'R' channel selector before selecting the first colour bar, and keep it held down as the channel indicator is moved and dropped on its destination channel. Colour selection, region shape and size and all output levels are all swapped or copied; it is not possible to take only part of a channels settings during either operation.

'Swap' and 'Copy' will only apply to the current event, so if changed in a dynamic event, the same change will normally need to be made to both ends of the dynamic. If a higher priority channel is copied to a lower one, no difference will be seen in the image, or with 'Show' or 'Mask' on, as the higher priority channel will completely cover the lower one.

MULTIPLE CHANNEL CONTROL.

At the bottom left of the window is a line of numbers which allows for one channel to control others. This is more easily seen if the full Mega 2 window is opened by double pressing the "M2" key. The grid of numbers at the right of the window shows which channel is controlling which **Fig. 38**; the defaults are shown in yellow. In this case, the 1, 2 and 3 in the lines represent the R, G and B channels.

The default is that R controls 1, G controls 2 and B controls 3; the other values in the grid are greyed out. When using these buttons to assign channel control, the same priority rule applies as before; R has priority over G, which has priority over B.

Fig. 38

The numbers in the grid have 4 options. The default (yellow), is that the channel control is normal; a greyed out number means that control of the channel it represents is off. A '-' sign in front of the channel number means that it will subtract that channel from the current one, if the priority allows it.

The other option, in white, will assign the channel it represents to the channel whose line it is in. Thus if, in the numbers of the R channel, the first number is 1 in yellow (normal), the second one is 2 in white and the third one 3 in grey, the R channel will control the R and G channels; **anything selected by them, and their regions, will have all the output values from the R channel controls applied to them**.

This is regardless of the grid numbers for the G channel, as the R channel has priority over it. In this instance, the B channel will work as normal (if the colour of the 3 opposite it is yellow).

The negative values will only have an effect if channels overlap; those in the R controls will have no effect, as the R channel has priority anyway. The effects are as follows: both G and B set to -2; G cuts hole in B, but G is invisible; G and B both set to -3, B cuts hole in G but B is invisible; G set at -3 but B is normal, B cuts hole in G, but both are visible.

This is probably best seen by expanding the channels and making overlapping regions. For this multiple control, only the colour correction is ganged; channel selection, and the size and shape of regions, can still be done for each channel individually. Changing the channel control numbers will only affect the current event, as with any other trim; if one is changed at either end of a dynamic event, the other end of the event will normally need the same trim applied to prevent there being a flash at some point.

INVERT:
'Invert', at the bottom centre of the single channel window, or the right of the full Mega 2 window, will completely invert the selection for that channel; both the actual selection and regions size and shape will be inverted. It is not possible to invert only the region.

SHAPE:
The 'Shape' button near the bottom right of the single channel window, and alongside each channel in the full window, is an indicator that the channel is being sent a MegaShape; this function is described later in the manual.

'IN' and 'ACTIVE'; they have no function with the Evolution panels. If the window behaviour is altered (this function is described elsewhere in the manual) such that the window doesn't close when another corrector is selected, the 'Active' button will change to say 'Inactive'.

6 CHANNEL SYSTEMS.

In 6 channel systems, the second set of 3 channels (YCM) are actually before the other 3 (RGB), and there is **no priority between the two sets of channels**; for most practical purposes, the RGB and YCM groups can be treated as 2 separate colour correctors, **in which the YCM channels come first**. The only interaction between the 2 sets of channels is that it is possible to swap and copy between them; in this case, the priorities of the swapped (or copied) channels then become those of the destination ones.

So if the R channel is swapped for C, it will be lower priority than Y but higher the M, but have no priority interaction with G and B. The C channel will now have become the R channel, and thus have priority over G and B, but has no priority interaction with Y and M. As can be seen in the full Mega 2 window, multiple channel control is only available between the two separate sets of three channels.

FOCUS OPTION.

The Focus option can either soften and sharpen an image, and each of the R, G and B channels has its own control; it works on whatever part of the image is selected by its channel, and inside any regions. Additionally, it can soften or sharpen the key that is made by a Mega 2 channel selection, into which any correction is then applied. **These functions can be used at the same time on each channel.**

When Mega 2 is selected, the two right-hand knobs in the top row on the orange display will be labelled 'Focus' and 'Key'. **In the Mega 2 vdu window, the same functions are in small boxes labelled 'Output' (for 'Focus') and 'Shape' (for 'Key')**. (see below) Fig. 39. Tap on either to assign control to the orange sub-panel (the names when assigned will be 'Focus' and 'Key').

Fig. 39

The HVD grid chooses which direction the effect of the focus will be applied in: Horizontal, Vertical or Diagonal. **At least one must be on for Focus to have any effect**.

For general softening/sharpening, all 3 should be turned on.

Once a channel has selected part of an image, altering the (Output) Focus for that channel will either soften the selection or, by applying edge enhancement, sharpen it.

The shape which makes the selection can be independently softened or sharpened with the 'Key' knob ('Shape'). This is useful when it is hard to isolate part of an image; by softening the shape, visible pixelation can be considerably lessened. Focus and Key use the same HVD grid to choose which directions they work in.